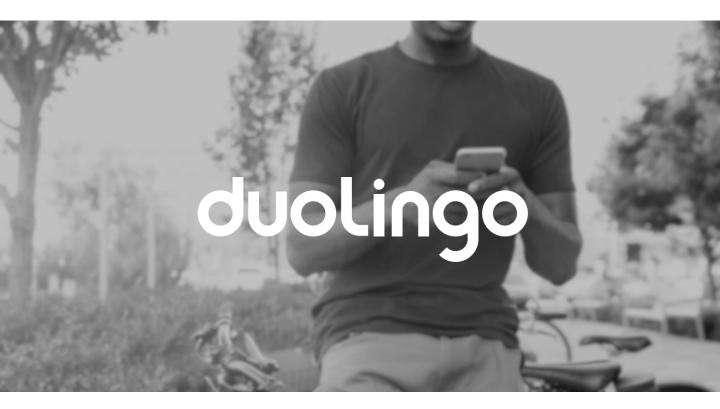
TMT – EdTech & Language Learning

# Equity Research Report DUOLINGO

Language Learning EdTech Pioneer - Providing Free Language Education to Worldwide Users

By Cascade Research





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# **Company Overview**

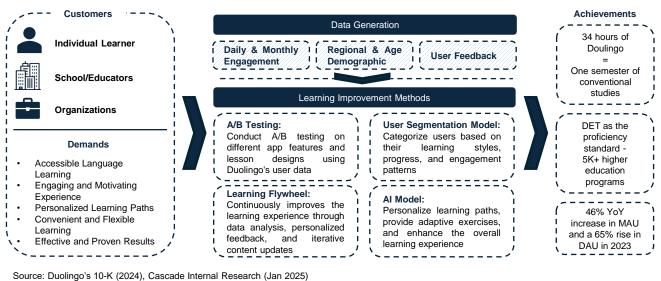


# duolingo

Headquarter	Pittsburgh, PA			
Founded	2011			
CEO	Luis von Ahn			
Employees	720			
Sector	TMT			
Price per share	\$ 334.42			
Shares outstanding	44.00M			
Market capitalization	\$ 15.44B			
EV	\$ 14.62B			
Net Debt	\$ 49.63M			
Gross margin	73.24%			
EBITDA margin	-1.17%			
Net margin	3.03%			
FCF	\$144.27M			

Source: Bloomberg Terminal (Jan 2025)

Exhibition 1 – Duolingo's Business Model: Freemium model is powered by varying demands, improved by data generated, and reached impactful achievements.



#### **Freemium Model and Core Products**

Duolingo's business model is centred around a freemium approach to language learning. It offers its core language courses for free, supported by advertising and in-app purchases. This allows Duolingo to reach a massive global audience and democratize language education. The company's revenue streams include: **1. The Duolingo App**: The world's most popular way to learn languages, offering over 40 language courses, along with Math and Music courses (available on iOS as of November 2023). Accessible for free, with over 85 million monthly active users as of December 2023. Top-grossing app in the Education category on both Google Play and the Apple App Store. Also accessible via web browser. **2. Super Duolingo**: A subscription offering that provides an ad-free experience, offline access, and additional features to enhance learning. Includes a family plan option. **3. Duolingo Max**: A premium subscription tier that includes all Super Duolingo features plus access to new exercises and features powered by generative Al technology. **4. Duolingo English Test (DET)**: An online, on-demand, computer-adaptive English proficiency assessment used for high-stakes purposes like university admissions, over 5,000 programs. Costs \$59 per test. **5. Duolingo for Schools**: A free web-based tool that allows teachers to integrate Duolingo into their classrooms, assign content, and track student progress. **6. Duolingo ABC**: A free app designed to teach early literacy skills to young children, aligned with Common Core State Standards and recommendations from the National Reading Panel.

#### **Revenue Breakdown**

In 2023, Duolingo's revenue reached \$531.1 million, a 44% increase year-over-year, primarily driven by its freemium model. Subscriptions were the largest contributor at \$404.7 million (76.2%), followed by the Duolingo English Test at \$41.2 million (7.8%), advertising at \$49.9 million (9.4%), and in-app purchases at \$34.7 million (6.5%). The company's growth is fueled by a large free user base, successful conversion to paid subscriptions, and increasing adoption of the Duolingo English Test globally.

#### **Strategic Partnerships**

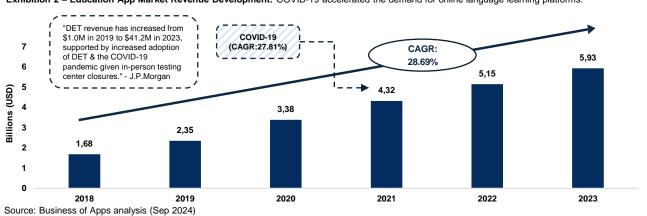
Duolingo's partnerships are essential to its growth and mission. Key partnerships include: **Educational Institutions**: Collaborations with universities and schools to integrate Duolingo into language programs and accept the Duolingo English Test for admissions. **Non-profit Organizations**: Partnerships with organizations focused on education and literacy to expand access to language learning in underserved communities. **Technology Companies**: Integrations with other platforms and services to enhance user experience and reach a wider audience.

#### Innovation and Growth

Duolingo is committed to continuous innovation to enhance its platform and expand its offerings. Key areas of focus include **Al-powered personalization** (especially via Duolingo Max for real-time feedback and tailored learning paths), **new content and features** (like Math, Music, podcasts, and interactive exercises), **gamification and engagement** (refining game mechanics to motivate learners), and **expansion into new markets** with localized content. "Learning Flywheel" based on A/B testing and user data drives iterative improvements, contributing to a 46% year-over-year rise in MAU and a 65% surge in DAU in 2023. Research indicates that 34 hours of Duolingo can parallel one semester of traditional language study, while surpassing 500 million downloads and earning Apple's iPhone App of the Year.



# **Industry Analysis**



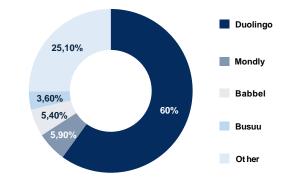
Exhibition 2 – Education App Market Revenue Development: COVID-19 accelerated the demand for online language learning platforms.

#### **Global Education App Market Growth**

The global education app market is expanding rapidly, fueled by the rise of mobile-first platforms and the shift toward online education. Valued at \$7 trillion, the global learning market had **only 2.3% online penetration in 2019**. Accelerated by the COVID-19 pandemic, spending in the digital language learning segment is **projected to record 26% CAGR** from 2019 to 2026, with penetration reaching 40% by 2025. Education app revenues have seen exceptional growth, from \$1.68 billion in 2018 to \$5.93 billion in 2023, representing a 28.69% CAGR. North America and Asia-Pacific dominate this market, accounting for over 65% of revenues, with Asia-Pacific expected to grow fastest due to expanding digital infrastructure and middle-class adoption.

#### Language Learning Platform Growth Led by Duolingo

Exhibition 3 - Online Language Education Market Share in 2023



Source: Bloomberg Terminal (Jan 2025), Sensor Tower (Sep 2024)

Language learning platforms are among the most dynamic subsectors of education apps. Duolingo, a dominant player, exemplifies this with a 46% YoY increase in monthly active users (MAUs) and a 65% rise in daily active users (DAUs) in 2023. This is backed by its gamified, freemium model, which converts a significant portion of users into paid subscribers (currently 8.3% of MAUs). Duolingo's paid subscribers have grown 8.5x between 2019 and 2023, driven by compelling product features and organic marketing strategies.

The freemium approach ensures low barriers to entry, while premium offerings like Duolingo Max and Family Plans cater to diverse user needs. DAU-to-MAU ratios, a key engagement metric, have climbed from 19% in 2019 to 29% in 2023, placing Duolingo's user stickiness on par with gaming apps. Enhanced retention features, including streaks and leaderboards, further solidify engagement. The introduction of Al-powered features and tiered subscription models is expected to maintain strong user growth (24% MAU CAGR projected from FY23-FY26) while **boosting monetization through higher ARPU (average revenue per user)**. Other firms like Babbel and Rosetta Stone have also contributed to sector growth through their focus on conversational learning and immersive techniques.

#### Market Share Overview

**Duolingo leads the online language learning market**, commanding **60% of usage market share in 2023**, far ahead of competitors such as Babbel (5.4%), Mondly (5.9%), and Busuu (3.6%). Its dominance is supported by its social-first marketing strategy and gamified approach, driving organic growth (~90%) with minimal reliance on paid acquisition. Despite this, the market remains fragmented, with other smaller players collectively holding 26.1% of the market.

Competitors are carving niches to attract specific audiences: Babbel focuses on conversational fluency for professionals, while Mondly emphasizes interactive, AR-based learning experiences. Duolingo continues to lead by offering a broader appeal, including DET and additional subjects (music, math), which contribute to its relative advantage over competitors. Its scalable freemium model and strong profitability surpass the competitors. Unlike Coursera, which struggles with Adjusted EBITDA and free cash flow, or Nerdy's VTS (Varsity Tutors for Schools) and Learning Memberships, which were not effective in enhancing scale and profitability, Duolingo maintains robust financial health. Its AI-driven personalization and high user engagement further reinforce its leadership and potential to expand into untapped regions and demographics.



Exhibition 4 - Competitors: Duolingo is a leader in online language market, challenging Pearson's dominance in high-level education.

Company Name	Duolingo	Pearson	Chegg	Coursera	Average
Logo	duolingo	Pearson	Chegg®	coursera	
Market Cap.	15.44B	10.52B	0.15B	1.35B	6.87B
Revenue	689.5M	4469.9M	66.2M	684.4M	1477.5M
	71.4M	1104.6M	77.5M	-72.8M	304.2M
EBITDA Margin	10.4%	24.7%	11.7%	-10.6%	9.1%
EV/EBITDA	204.7	11.42	5.39	-8.69	53.21
R&D Costs	0.2M	-	0.18M	0.14M	0.17M

Source: Bloomberg Terminal (TTM, Jan 2025) - Revenue and EBITDA are adjusted.

#### **Financial Benchmarks**

Duolingo stands out with a market capitalization of **\$15.44 billion**, the highest among its peers, reflecting investor confidence in its innovative business model and significant growth potential. In comparison, Pearson holds a strong position at **\$10.52 billion**, leveraging its legacy in education, while Coursera and Chegg trail behind at **\$1.35 billion** and **\$0.15 billion**, respectively.

Pearson dominates in **revenue**, generating **\$4.47 billion**, which underscores its institutional partnerships and diversified offerings across high-level education and certifications. Duolingo's revenue of **\$689.5 million** is significantly smaller but remains comparable to Coursera's **\$684.4 million** and far surpasses Chegg's **\$66.21 million**, highlighting its ability to attract a growing user base in the online language learning segment.

In terms of profitability, Pearson leads with an EBITDA of \$1.1 billion and an EBITDA margin of 24.7%, reflecting its efficient operations and strong financial stability. Duolingo demonstrates solid efficiency for a growth-stage company, with an EBITDA of \$71.4 million and a margin of 10.4%. Chegg maintains modest profitability, achieving an EBITDA of \$77.5 million and a margin of 11.7%, while Coursera faces ongoing challenges with a negative EBITDA of (\$72.8 million) and a margin of (10.6%).

Duolingo's **EV/EBITDA ratio of 204.7** highlights high investor expectations for future growth, significantly outpacing Pearson's **11.42** and Chegg's **5.39**, which are more reflective of mature, stable business models. Coursera's negative EV/EBITDA indicates its struggle to achieve profitability and underscores the market's perception of higher risk.

By combining innovation, scalability, and cost efficiency, Duolingo is poised to challenge traditional market leaders like Pearson, while maintaining a significant advantage over **niche-focused competitors like Chegg and Coursera**.

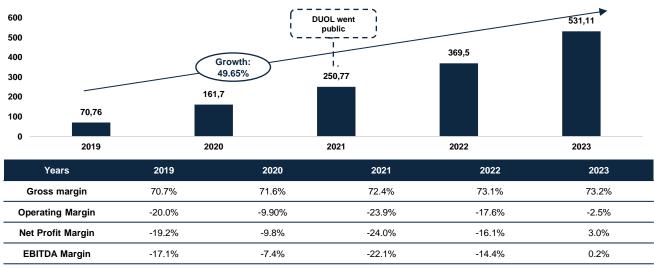
#### **Growth Potential and Valuation**

Duolingo leverages its Al-driven model to deliver innovative, cost-efficient solutions, with R&D costs at just 4% of revenue. Features like **Duolingo Max** and the **Duolingo English Test (DET)**, a cost-effective alternative to IELTS, enhance user retention and broaden its appeal. These initiatives, alongside expansion into new verticals like math and music, directly challenge Pearson's dominance in high-level education, where its institutional trust and revenue scale remain significant advantages.

The online education market, with only a fraction of its estimated **1.8 billion global learners** currently engaged, presents vast untapped potential. Duolingo's gamified, scalable approach positions it for continued growth, while Pearson's focus on certifications and advanced education ensures stability and resilience in this competitive landscape.



# Financial Analysis – Revenue Development



Exhibition 5 – Improving Margins: Duolingo sees stellar revenue growth and improving productivity, with net profit margin turning positive in 2023.

Source: Bloomberg Terminal (Jan 2025)

#### Organic Growth Drivers

- Media play and free word of mouth
- advertising (social-first approach)
- Global expansion with focus on second-
- language English learners
- Expansion of subscription tiers and
- offerings including the use of AI

#### Artificial Growth Drivers

- Strategic partnerships with other mediarelated firms to expand subject and product range
- Partnership popular social brands and media trends to further expand on target reach

### Organic Growth Drivers

Source: Bloomberg Terminal (Jan 2025)

Duolingo's focus on increasing number of users and improving user experience has been the key to its organic growth. With the **social-first approach**, the increased reach via short-form video platforms, capitalizing on trends and media, Duolingo is able to **increase its DAU (daily active users) by over 50% YoY**. Furthermore, improvements in habit formation features such as the 'Friends Streak' have help to transform the number of DAU into the growth in MUAs (monthly active users) and into paid subscribers.

The **increased importance of English** is also yet another catalyst for Duolingo as the number of international users learning English has been rising to over 2 million DAUs by 2024Q3. The firm's product offerings, **extending beyond learning in the app environment into standardized English exams**, saw potential to capitalize on this growing demand from intermediate English learners. This can be seen in the growth of revenue from Duolingo's English Test segment rising from \$1.0 million in 2019 to \$41.2 million in 2023.

**Subscription revenue** has also been steadily increasing from \$54.9 million in 2019 to \$404.7 million in 2023 and thus allowing the firm to maintain its high gross margins. The move towards AI has been helping Duolingo to enhance user experience helping them to keep up with the growth of users funneling in from free tier users. Duolingo has recently rolled out its video call with Lily function, an AI-powered video call bot, for Duolingo MAX users showing its commitment towards innovation and an area for differentiation between different subscription tiers. With a heavy **shift towards AI**, **the new subscription tier Duolingo MAX**, and a leaner workforce, the firm has improved their operating margins and net profit margins significantly in 2023, with net profit margin turning positive for the first time since 2019 at 3.0% in 2023FY.

#### **Artificial Growth Drivers**

As seen in recent press releases in August and September 2024, Duolingo has been engaging in **strategic partnerships** with music companies such as **Sony Music** and **Loog** to expand its Duolingo Music lessons. This will be one of the firms first initiative in creating physical items apart from software e-learning and certificate, i.e. a portable compact piano, which can lead to further expansion for Duolingo apart from teaching languages. Additionally, Duolingo has been seen to keep up with recent trends like its partnership with **Netflix's Squid Game** to advertise its Korean lessons.



Exhibition 6 – Solid Liquidity: Duolingo maintains strong short-term stability with reduced debt reliance and a solid financial foundation.

#### Liquidity & Solvency Assessment

Years	2019	2020	2021	2022	2023
Current Ratio	2.46	2.41	5.20	3.84	3.24
Quick Ratio	2.18	2.15	4.92	3.60	3.02
LT Debt/Capital	14.54	7.39	5.37	4.16	3.12
Total Liabilities/Total Assets	9.72	4.63	4.40	3.14	2.21

#### **Debt Analysis**

Years	2019	2020	2021	2022	2023
Total Debt/Capital	14.54	7.39	5.37	4.16	3.12
EBITDA / Interest Exp.	-604.35	-141.58	-	-	-
Total Debt/EBITDA	-0.76	-0.68	-0.52	-0.44	16.23
Net Debt/EBITDA	4.18	9.37	9.47	10.99	-561.02

#### Asset Efficiency

Years	2019	2020	2021	2022	2023
Total Asset Turnover	-	1.19	0.60	0.52	0.62
Fixed Asset Turnover	-	11.42	9.82	10.26	16.00
Accounts Receivable Turnover	-	10.62	9.35	9.25	7.83
Return on Assets	-14.26	-8.98	-9.09	-7.97	1.68

Source: Bloomberg Terminal (Jan 2025)

#### **Liquidity Analysis**

Duolingo's liquidity ratios reflect its commitment to growth and operational efficiency. The **Current Ratio** has remained stable **averaging at 3.4** between 2019 to 2023, indicating its ability to use near-cash assets to meet its short-term obligations. Similarly, the **Quick Ratio** averages at 3.2 during the same period. The firm is able to maintain its short-term liquidity position to be **near the industry median range of 1.9 to 2.1**. The **Long-Term Debt-to-Capital Ratio** has decreased substantially from 14.5 in 2019 to 3.1 in 2023 as **Duolingo shifts away from funding via debt** as the company IPOs and enters the stock market in 2021. This also corresponds with the **decrease in Total Liabilities-to-Assets Ratio** from 9.7 in 2019 to 2.2 in 2023.

#### **Debt Analysis**

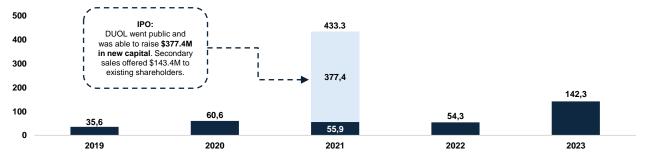
Duolingo's **debt has been decreasing steadily** with total debt to capital falling from 14.5 in 2019 to 3.1 in 2023. The firm also has negative net debt position, with the company has a positive net cash position exceeding its debt, indicating **a very strong financial status**. Having **large cash reserves** would allow Duolingo to internally fund investment ideas without having to rely on accumulating more debt. This enables the firm to reconstruct its capital structure as needed without interest responsibility pressures. With the firm being public, however, **shareholder pressure may also exist** to return this excess cash.

#### **Asset Efficiency Analysis**

The Total Asset Turnover ratio declined from 1.2 in 2020 to 0.6 in 2023, which can indicate poor efficiency, yet with Duolingo's service-based business model and rapid revenue growth, this may be an area for caution but not concern. The Fixed Asset Turnover ratio has been growing steadily, improving from 11.4 in 2020 to 16.0 in 2023. This demonstrates an effective use of its software to support revenue growth especially from increasing focus into Al-supported learning within its application. The Accounts Receivable Turnover ratio dropped from 10.6 in 2020 to 7.8 in 2023, reflecting extended payment cycles due the international customer base and subscription revenue model. Duolingo's Return on Assets (ROA), while negative from 2019 to 2022, improved steadily during this period, turning positive at 1.68% in 2023. This transition from negative profitability to positive ROA reflects the company's ability to balance growth investments with improving net income. The shift aligns with its efficient use of fixed assets and a focus on scaling its subscription-based revenue model.



Exhibition 7 - Liquidity Development Between 2019 - 2023 (in \$M): Duolingo's IPO had injected a substantial amount of cash into the firm in 2021.



Cash Flow	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23
Net Income	(13.6)	(15.8)	(60.1)	(59.6)	16.1
Depreciation & Amort., Total	1.3	2.3	2.7	4.9	7.1
Other Non-Cash Adj.	4.1	17.0	41.2	72.8	95.3
Changes in Non-Cash Capital	10.3	14.3	25.4	35.5	35.2
Cash from Ops.	2.2	17.7	9.2	53.7	153.6
Capital Expenditure (Acq. of Fixed & Intang.)	(3.8)	(3.4)	(3.6)	(5.6)	(3.2)
Purchases of marketable securities	31.0	47.0	430.5	14.8	13.8
Cash from Investing	2.4	(4.0)	(6.2)	(14.2)	(13.6)
Proceeds from issuance of common stock	0.2	0.0	0.9	0.0	0.0
Tax withholding for employee share settlement	-	-	-	-	(11.5)
Repurchase of Common Stocks	(0.2)	0.0	(0.9)	(0.0)	(0.0)
Exchange rate changes effect	0.0	0.0	0.0	0.0	0.0
Cash from Financing	31.0	47.0	430.5	14.8	2.1
Net Change in Cash	35.6	60.6	433.3	54.3	142.2

Source: Bloomberg Terminal (Jan 2025) - Certain line items from the cash flow statement have been omitted.

#### Positive Signal – Exceptional Cash Flow Growth

Duolingo has demonstrated **substantial growth in its cash flow metrics** from 2019 to 2023, especially since 2021 reflecting the company's strong growth and effect of going public. Operating cash flow surged from \$2.2 million in 2019 to \$153.0 million in 2023, translating to a compound annual growth rate (CAGR) of 133%. This growth was primarily driven **by the substantial increase in net income** in 2023. Duolingo's revenue growth is driven from its growth in global DAUs, subscription tier users, and returning users.

#### Subscription Model

With Duolingo's revenue make-up now mainly from its different subscription tiers, **deferred revenue has been increasing** from \$17.2 million in 2019 to \$91.6 million in 2024. The increased numbers of MAUs, despite an 8.3% penetration rate, saw a significant improvement from 3.0% penetration in 2019, generating higher net income allowing the firm to enjoy positive net income for the first time since 2019 at \$16.1 million in 2023.

#### Impact of Going Public

Duolingo went public following its IPO in July 2021, while still maintaining its 'mission-driven focus,' as stated by Von Ahn in his letter to the public following Duolingo's IPO. The immediate effect of increased in financing in 2021 of \$430.5 million would allow for the firm to **become even larger and pursue more sophisticated business models**. By 2023, the effect of this cash injection is absorbed into other parts of the firm and with increased in net income, the firm can aim to rely on retained profits to fund operations and developments keeping a **healthy cash flow position** in anticipation for more large-scale growth opportunities.

#### **Opportunities for Acquisitions**

Duolingo, with strong cash flows, growth, and balance sheet, have ample cash to acquire and form strategic partnership with other firms to help catapult its growth. Its expansion into Music and Math categories would enable the firm to **opportunity to create physical products** to offer to users in addition to the app, **adding a new stream of cash flows** apart from the aforementioned subscription model. They also **acquire more companies** to further improve on design and animation, as seen in previous acquisition of Hobbes and Gunner of which both are design companies, to **differentiate themselves** in times where aesthetics plays a role in user retention.



# **Strategic Analysis**

# Current Upside: Market Leadership with Differentiated Business Model

Driven by the global shift toward online education and the increasing demand for language learning platforms, Duolingo's key to success is beyond simply offering language courses. Duolingo's unique **freemium model**, **Alpowered personalization**, and gamified approach distinguish it from traditional education providers. The platform's design fosters organic growth, with approximately **90% of its user acquisition being cost-free**, creating an exceptionally scalable business model. With unique features like streaks, leaderboards, and interactive lessons, Duolingo achieved a high **user retention rate (CURR) and conversion to paid subscriptions**, which have grown at a remarkable 8.5x rate over the past five years. Duolingo's economic moat is anchored in its ability to leverage AI to optimize both user experience and cost efficiency. Al-driven features including Duolingo Max enhance the platform's teaching efficacy, attracting users, while keeping **R&D expenses low at just 4% of revenue.** Such leverage allows Duolingo to allocate resources toward growth initiatives, including expansion into math, music learning and DET which significantly **broadens its addressable market**. Its social-first marketing strategy, which generated **3 billion impressions** in 2023, amplifies its brand presence with minimal expenditure.

Duolingo **targets a diverse demographic** by serving learners across all proficiency levels, from beginners to advanced users. Unlike Busuu(Chegg), which focuses on beginners, or Pearson, which targets certifications but lacks gamification, Duolingo offers an end-to-end solution. This includes advanced resources and the Duolingo English Test (DET), a cost-effective IELTS alternative. Duolingo solidifies its position as a comprehensive language-learning platform.

The company's financial trajectory reflects its **successful strategic execution and potential**, with a 44% YoY revenue increase in 2023 and a long-term adjusted EBITDA margin target of 30-35%.

Duolingo's innovative approach and ability to cater to a broad spectrum of learners position it as a leader in the online education market. By combining scalability, cost efficiency, and diverse offerings, Duolingo is expected to sustain growth and expand its dominance in the industry.

# **Current Downside: Operational and Regulatory Risk**

Duolingo's emphasis on **user acquisition over ARPPU (Average Revenue Per Paying User)** presents an operational risk. This approach drives rapid market penetration but delays revenue optimization, creating dependency on consistent user base growth.

The risk of **slower-than-expected user acquisition** is present, which could hinder revenue growth given the freemium model's reliance on scale. Also, after the strong recent user growth, a low paid-sub penetration rate increase of 0.4% by 2026(E) can cause decline in revenue. **Regulatory challenges** pose a risk, as seen with global scrutiny of platforms like TikTok. Although Duolingo operates in a different domain, its reliance on user data for AI personalization and its international presence could make it vulnerable to similar concerns.

# Future Implications: Exploiting Fragmented Market through Strategic Initiatives

The online education market is positioned for substantial growth, driven by **low penetration in the total addressable market (TAM)** and the rapid expansion of the **online language learning segment**, which is projected to grow at a CAGR of 13.74% through 2030. Despite the global demand for language learning, digital platforms have reached only a fraction of the estimated 1.8 billion global learners, offering enormous untapped potential.

Duolingo continues to dominate this market, with increasing **Daily Active Users (DAU)**, as reported by **Sensor Tower**, along with rising global downloads and **website visits tracked by SimilarWeb**. In contrast, competitors like **Coursera**, **Chegg**, **and Nerdy** have seen declines in website traffic and are losing their competitive positions, highlighting Duolingo's growing market leadership. The platform's **diverse demographic**, spanning various ages and cultural backgrounds, further underscores its wide-reaching appeal. While **less than 50% of Duolingo's users focus on English**, other popular languages such as Spanish, French, and Korean attract a broad range of learners globally, solidifying its position as a multilingual, culturally inclusive platform.

Beyond its *Squid Game*-themed **"Learn Korean and Else"** campaign, Duolingo has leveraged innovative partnerships, such as its collaboration with **WEBTOON**, to integrate popular Korean webcomics into language learning. These culturally resonant initiatives, combined with its gamified approach, have created a unique ecosystem that enhances user engagement and drives its 90% organic growth.

However, this reliance on organic growth presents a potential vulnerability. While Duolingo's strong social media presence and viral campaigns have been effective, the company **must continue diversifying its growth mechanisms** to mitigate risks. By expanding paid acquisition, strengthening partnerships, and targeting untapped regions (as it has consistently done so far), Duolingo can sustain its leadership in the rapidly evolving online education market.



## **Business Model Competitiveness**

Evaluates the durability and flexibility of the company's business model by assessing scalability, diversification of revenue streams, adaptability to change, operational efficiency, and ability to retain customers in a competitive or disruptive environment.

## **Market Stability**

Analyses the stability of the market the company operates in, focusing on growth potential, sensitivity to economic cycles, regulatory impact, competition intensity, and the predictability of customer demand.

## **Competiton Pressure**

Assesses the level of competitive pressure the company faces, considering market share, unique advantages, pricing power, barriers to entry, and the ability to innovate and differentiate in a crowded market.

## **Financial Health**

Measures the company's financial strength by evaluating revenue growth, profitability, debt levels, cash flow stability, and liquidity to ensure long-term sustainability and resilience against economic shocks.





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# Sources

- 1. Duolingo, Inc. (2024). Form 10-Q: Quarterly report for the period ended September 30, 2024. Retrieved from https://investors.duolingo.com/sec-filings/sec-filing/10-q/0001562088-24-000250
- Duolingo, Inc. Form 10-K Annual Report 2023. U.S. Securities and Exchange Commission, 2024. Retrieved from <u>https://investors.duolingo.com/sec-filings/sec-filing/10-k/0001562088-24-000050</u>.
- 3. Bloomberg Terminal. (2024). Financial statement analysis: Balance sheet of Duolingo Inc. Retrieved from Bloomberg Terminal.
- 4. Bloomberg Terminal. (2024). *Financial statement analysis: Income statement of Duolingo Inc.* Retrieved from Bloomberg Terminal.
- 5. Bloomberg Terminal. (2024). *Financial statement analysis: Cash flow statement of Duolingo Inc.* Retrieved from Bloomberg Terminal.
- 6. Duolingo. "Duolingo Acquires Gunner to Accelerate Product & Brand Development." *Duolingo Press Release*, 4 Oct. 2022. Retrieved from <u>https://investors.duolingo.com</u>.
- 7. Duolingo. "Duolingo Doubles Down on Design and Animation With Acquisition of Hobbes." *Duolingo Press Release*, 9 Jul. 2024. Retrieved from <u>https://investors.duolingo.com</u>.
- Duolingo. "Duolingo Introduces AI-Powered Innovations at Duocon 2024." Duolingo Press Release, 24 Sept. 2024. Retrieved from <u>https://investors.duolingo.com.</u>
- 9. "Language Learning App Market Data." *Business of Apps*, n.d.











Lukas Robrecht is currently pursuing a Master's in Finance at UCL, where he focuses on areas such as Asset Management, Corporate Finance and Private Equity. His academic journey includes a BA in Accounting and Finance from Coventry University. Lukas has gained practical experience through various internships and projects, particularly in investment banking and private equity. Beyond academics, Lukas is committed to applying his knowledge in practical settings, including founding Cascade Research, which aims to empower students to explore financial research and valuation.

# Head of Equity Research – Dk Lee

Dk Lee is an MSc Finance student at UCL, holding a BSc in Banking and International Finance from City, University of London, Cass Business School. He gained 18 months of disciplined experience from the military, which made him a resilient and consistent individual, and gained hands-on expertise as a research assistant at Counterpoint Research. His passion lies in uncovering hidden investment opportunities and conducting in-depth analysis to drive long-term value, which aligns with the aim of the Cascade Research Equity team.

# Analyst Equity Research – Darin Hansakul

Darin holds a BSc in Economics from the University of Warwick. She has previous experience in markets with a key focus on macroeconomic analysis and industry trends. With a top-down approach to research of the market environment, industry, and current events, she generated +7% Y2023 compared to the ACWI in her previous role as a Fund Strategist in a securities firm in Thailand. She has passed the CFA level 1 exam and is the process of pursuing the whole qualification.



# Analyst Equity Research – Daniel So

Daniel holds an MA in Economics with Management Science from the University of Edinburgh. He spent two years as a Management Analyst at Citibank Hong Kong, where he focused on the implementation of Al and Robotics technologies. This experience provided him with valuable insights and frameworks for evaluating emerging technologies. Daniel is also an active investor who utilizes a fundamental investing approach, emphasizing business models, economic moats, financial sustainability and management integrity.

