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ALPHA CHALLENGE
The University of North Carolina

MONTH DATE , 2025

Team Number: 11

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duolingo **NASDAQ: DUOL; 1-Year PT: $218, 26% Upside**

Duolingo (NASDAQ: DUOL) Overview

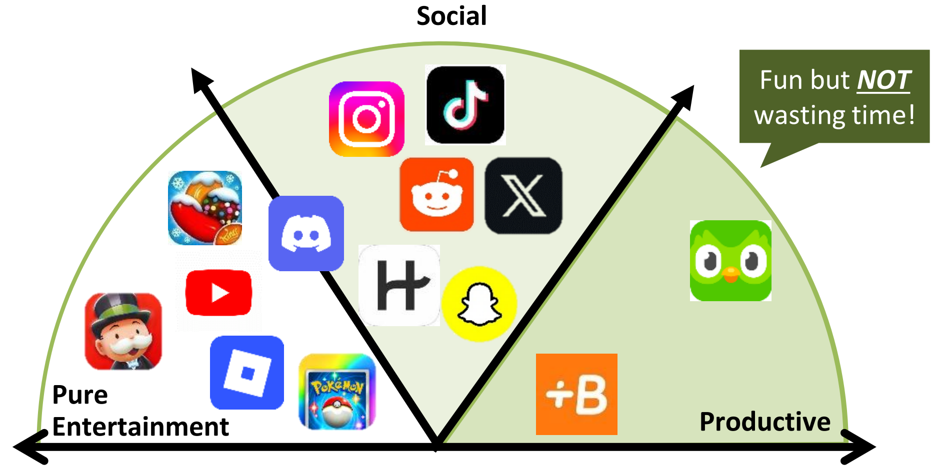
A Gamified Education Platform at Global Scale

Company Description & Key Stats

- DUOL is a **AI-powered learning platform combining proprietary model with gamification**
- **50M+ DAUs** as of Q3-25 (+36% YoY) with **~9% paid penetration**
- Revenue reached $748M in FY-24 with ~73% gross margins
- Beyond languages, Duolingo is scaling to **new subjects including Math, Music, and Chess**

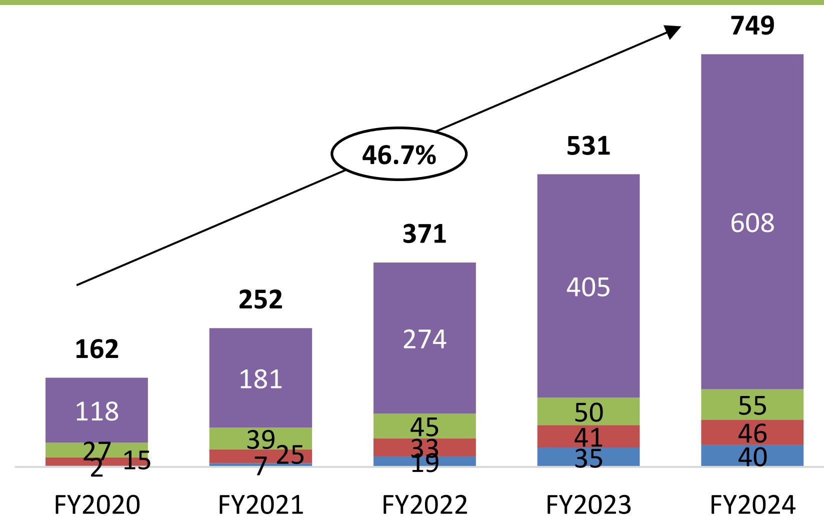
Current Price	172.78	Gross Profit	72%
Market Cap	7,987.2	LTM Net Income	386.0
Enterprise Value	7,531.20	LTM Diluted EPS	8.04
52 wk High/Low	544.93 / 166.27	P/LTM EPS	23.03x
LTM Revenue	964.3	EV/LTM Revenue	7.81x

Sweet Spot in the Leisure Screen-Time Battle



Revenue Breakdown & Growth

Segment	% Rev (24A)	20-24A CAGR	Key Revenue Drivers
Subscription	81%	50.8%	Paid penetration + upsell
Advertising	7%	19.4%	DAU growth offsets CPM volatility
Duolingo English Test	6%	31.7%	Higher ASP & int'l visa demand
In-app Purchase & Other	5%	111.5%	New virtual-goods "Energy" mechanic

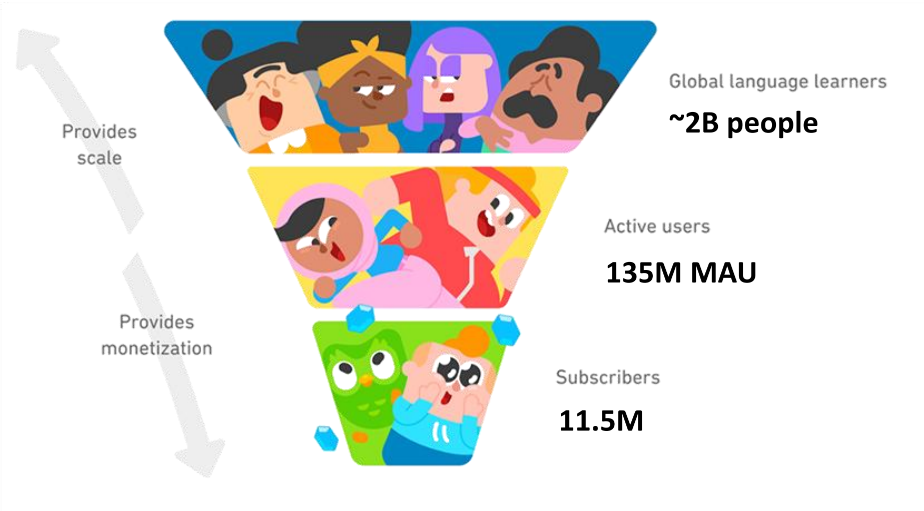


How the Firm Makes Money

A **Gamified** Education Platform at Global Scale

TAM with a long runway

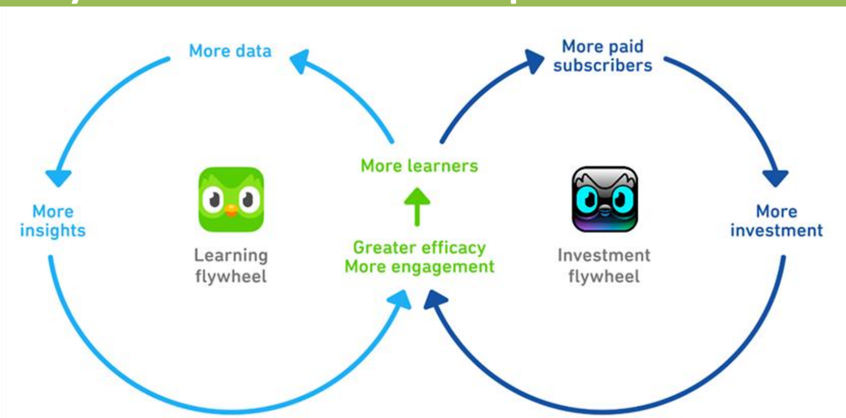
- DUOL is relatively well penetrated in the U.S., but there's large white space in APAC and EMEA, which accounts for 1B+ language learners



Value Proposition and Product Offering

Free	*Ind: \$13/mo. / \$96/yr.* *Family: \$120/yr.*	*Ind: \$30/mo. / \$168/yr.* *Family: \$240/yr.*
With Ads	*No Ads* *Skills Practice* *Mistakes Review* *Legenday Challenges*	*No Ads* *Skills Practice* *Mistakes Review* *Legenday Challenges* *AI features (e.g., Video Call with Lily Explain my Answer Roleplay)*

Flywheel Continues to Deepen DUOL's Moat



Key Drivers for Earnings

Topline:

- MAU growth
- Paid subscriber penetration
- Average revenue per subscriber
- Non-subscription revenue

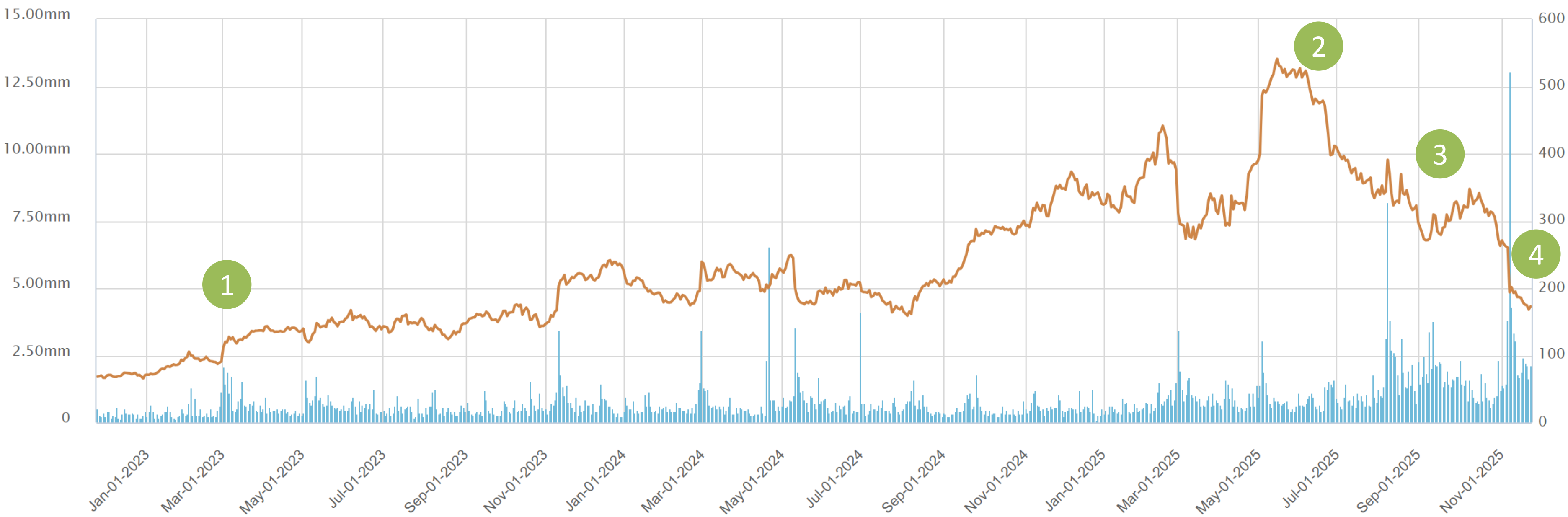
Profitability:

- Net income margin / EBITDA margin

Recent Market Context and Equity Movement

Stock down ~70% since May peak amid AI disruption fears, growth slowdown and short-term profitability concern

DUOL 3-Year equity movement & volume



1 **2023 - AI Partnership Ignites the Rally**

OpenAI collaboration sparks explosive growth — daily users, monetization, and free cash flow soar 25x

2 **Mid-2025 – 'AI-First' Vision Alienates Users**

CEO mentions 'AI-First' – a Poorly-received AI-driven hiring announcement in late April (later clarified in May) caused negative public opinions

3 **H2 2025 AI Winner to AI Loser Narrative**

Chatbots and real-time translation tools trigger fears that AI will disrupt, not empower, language learning

4 **Q3 2025 Long-Term Focus Shakes Confidence**

Management **signals shift toward long-term investment**, putting **near-term monetization** on the back burner

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Key Debate on Language Learning and AI Disruption

AI disruption fear overstated — TAM is there, DUOL still dominates, AI threats not good enough and core users are highly insulated

AI disruption fear overstated — TAM is still there and core users are largely insulated from AI substitutes

DUOL's Gen AI Displacement Risk by Use Case

Category	% Users	Our thoughts
Support my education	26%	Education is slow moving; Translation tools will need to be ubiquitous before getting removed from curriculum
Connect with People	20%	Language is culture, and although connecting may be easier with improved translation tools its unlikely to be frictionless
Just for fun	15%	For people playing DUOL as a game, the app will only get more engaging while translation tools are more for utility
Spent time productively	12%	Relative to alternatives (social media, mobile games), DUOL will still be perceived as a more productive time weaker
Boost my career	9%	Even with better tools, corporates will be willing to pay a premium for fluent speakers to ensure nothing is 'lost in translation'
Highly Intact	**82%**	***High-LTV segments***
Prepare for travel	11%	Travelers have lower LT demand for knowledge and gen AI tools could make travel translation far easier
Other	7%	Unclear use case, could be at risk
At risk	**18%**	***Low-LTV segments***

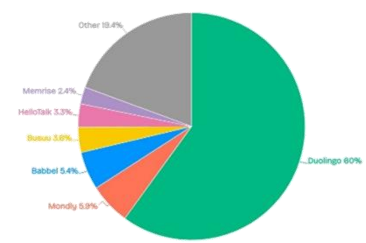
Moreover, 80% of US users weren't learning a language prior to using Duolingo >> DUOL self-created TAM from casual learners

Who are the Users?

Effort Level	Expectation: *Daily Conversation*	Expectation: *Fully Master*
Light	**Key DUOL User**	
Intense	**Key DUOL User** + other resources	DUOL has always been just a supplement

- AI expands resources for language learning
- Yet AI doesn't diminish our intrinsic desire to connect with people across borders, and it can't give us true cultural fluency

DUOL dominates category



Market share >60%+ among language apps

Substitute not there yet

- **Cost difference is real:** Alphabet's AI Ultra subscription costs nearly $150 per month versus about $30 per month for Duolingo Max
- **Real-time translation experience not seamless enough**

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Key Debate on Language Learning and AI Disruption

Fundamentals remain solid along the launch of AI language tools and DUOL's data flywheel creates hard-to-replicate protection

Recent retention data maintains an upward trend…

IOS	25Q1	25Q2	25Q3
1-Day Retention	53%	54%	54%
7-Day Retention	32%	35%	36%
30-Day Retention	16%	20%	20%
60-Day Retention	12%	16%	15%

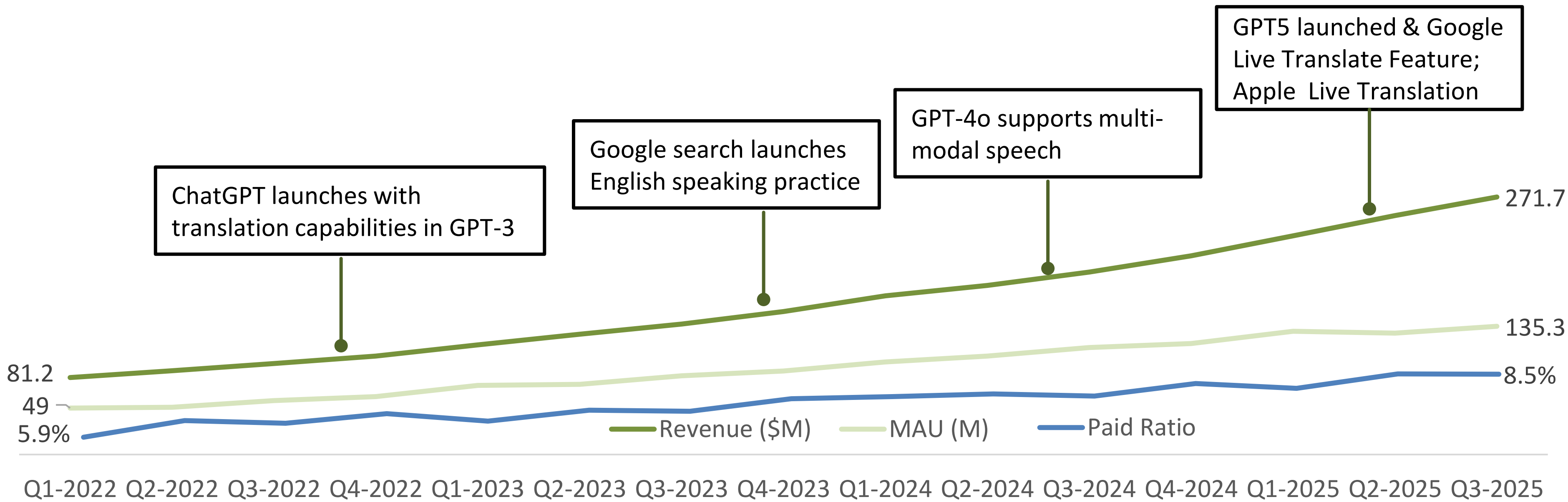
… Proprietary data creates durable protection from AI

750+ A/B tests *per quarter to accumulate know-how on how people learn best*

1 billion exercises every day, *creating the world's largest dataset of real learning behaviors*

The Real Moat*: A Self-Reinforcing Growth Engine Fueled by Gamification, Data, and A/B Testing*

Revenue and MAU trend & AI translation tool launch



Thesis #1: Platform Expansion

From language app to AI-native learning ecosystem to unlock still-low monetization

Leisure/Fun **Subjects** *Serious*

…

Music

Chess

Languages

Math

…

- **Music**: Complete a recent (Aug 2025) **acquisition of NextBeat** ($34.5M, a London-based music gaming startup) and **partners with Sony Music**
- **Chess**: Fastest growing subject and rolled out the **New Player=versus-Player functionality**

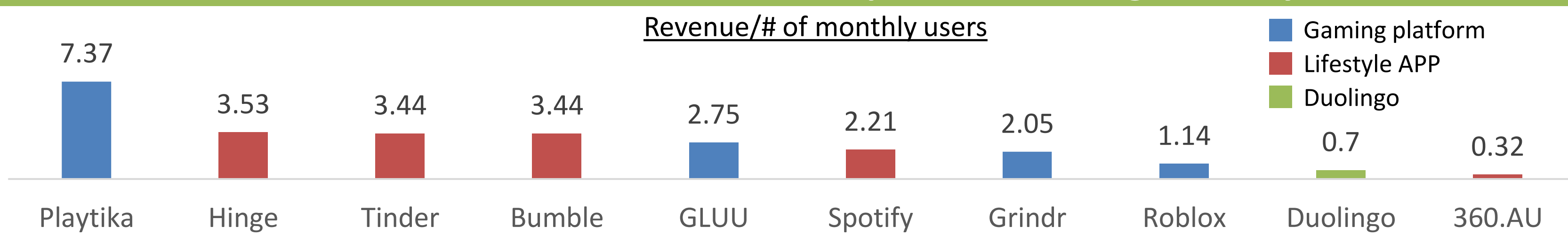
New subjects also support language biz

- **New science subjects in pipeline**: Physics, Chemistry courses produced internally with the help of AI; Teams working on product-market-fit

Bigger TAM	Higher Paid Ratio	Stronger Engagement	Higher ARPU

Powered by AI-assisted content creation at extremely low cost (90% cheaper & faster than human production)

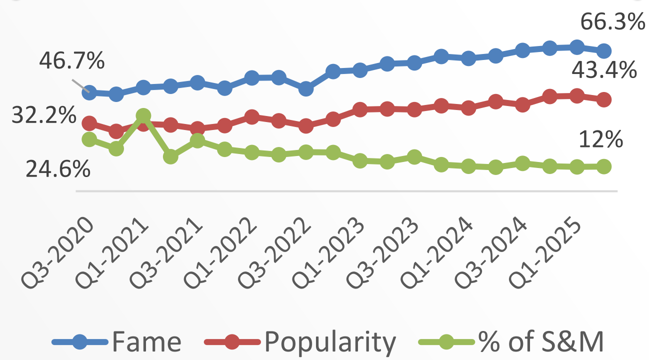
Current monetization of DUOL remains low compared to Gaming & Lifestyle APPs in U.S.



Thesis #2: Social media flywheel

Company's adaptability in managing its social media strategy and drove efficient customer acquisition

Demonstrated marketing efficiency in the past…



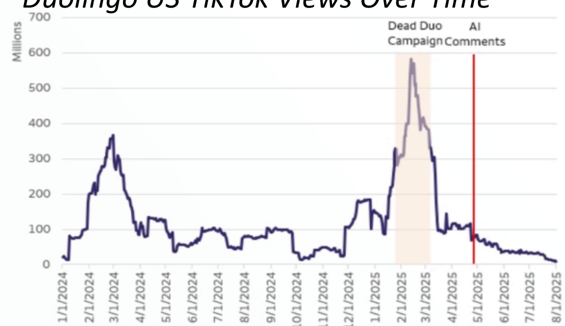
'DUO is Dead' campaign

- A zero-budget viral campaign to spark 1.7 billion social impressions and record user re-engagement

'DUO x Luckin' campaign

- Viral marketing campaign (Duo the Owl 'married' Lucky the Deer) & co-branded apparel
- **Meaningful tailwind to engagement growth （30% MAU uptick and well-retained)**

FUTURE Plans to increase paid marketing for user



- ***Intentionally reduce social media post in Q2/Q3*** *to shy away from controversy*
- ***Starting recently:*** *Spent a little bit more on actual marketing & unhinged posts , seeing a nice return in the U.S. in particular*

> *We have been doing almost no marketing spend in the U.S., but we plan to begin limited performance marketing there after* ***observing accelerated growth in Mexico following similar investment****.*
>
> ——DUOLING Q2 Earning Call

Why we view this positively

A team that mastered ***virality with near-zero budget*** *is now getting real firepower — the ROI potential is asymmetric and under-appreciated*

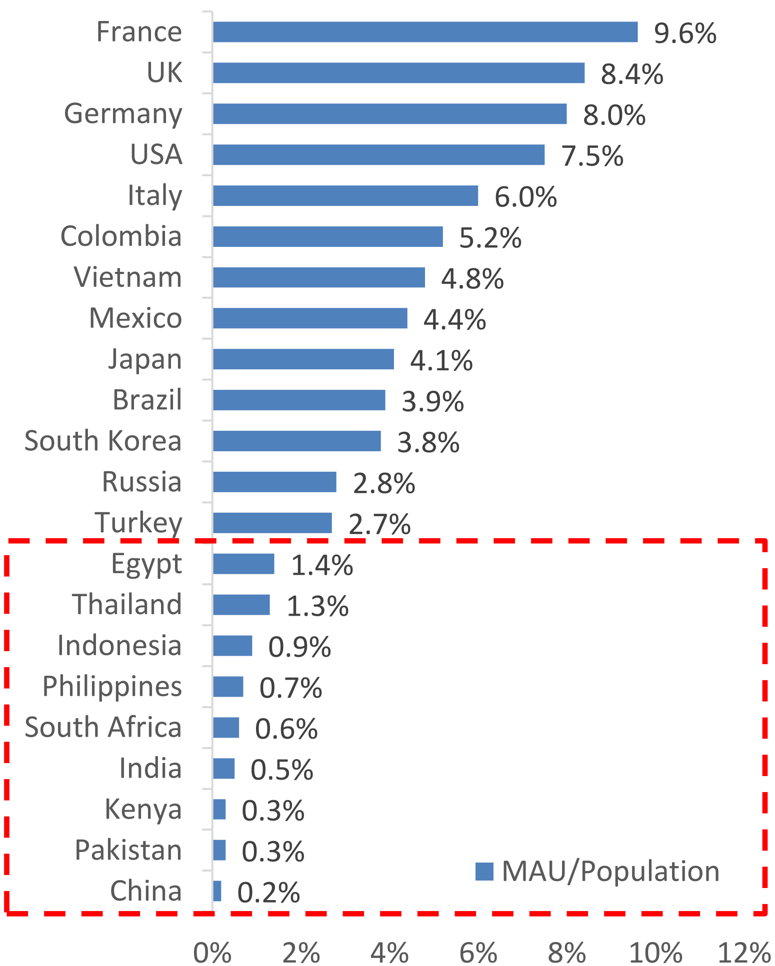
Historically CAC has been low ($1 to 2) *with large amounts of viral campaigns and word-of-mouth*

Thesis #3: Geographical Expansion

Long runway to unlock global market potential

Long penetration runway…

MAU/Population



While U.S. and Canada decelerates, other region remain strong and contribute meaningfully

DAU Growth across Region

	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	MAU Share	Penetra-tion
UCAN	63%	60%	57%	62%	47%	44%	40%	33%	35%	23%	*20%*	*7.5%*
LATAM	52%	60%	67%	86%	80%	87%	81%	80%	63%	50%	*17%*	*3.6%*
APAC	61%	66%	74%	93%	93%	93%	81%	81%	78%	71%	*22%*	***0.8%***
EMEA	78%	72%	79%	93%	81%	79%	58%	58%	53%	45%	*40%*	*3.7%*

China (0.2% MAU/Population)

- China is still not a large fraction of Duolingo's business, it is about **5%, 6% of their business at the moment**
- China is fastest-growing region for growth & engagement
- *Near-term catalyst: Max is being tested at the moment*

India (0.5% MAU/Population)

- Prior roadblock: interface design, inadequate language offering low paid ratio
- *Near-term catalyst: Hired senior PM for localization effort, leverage AI to add extra Indian language offerings*

At-the-moment international hiring:

- Marketing Manager, Southeast Asia
- Business Development Lead, Japan & Korea
- Software Engineer/Platform Engineer, China
- Senior Product Manager, Growth, China
- …

Valuation

Re-rating and continued growth potential as AI fears fade and margin trajectory persists

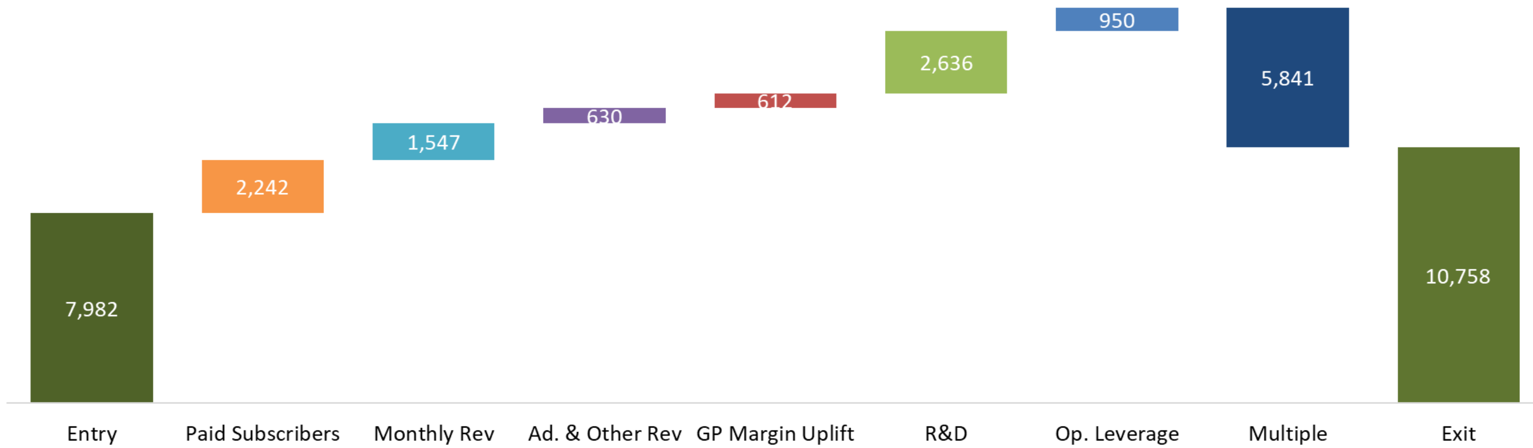
Base Case: Key Estimates vs. Consensus					
	Forecast			CAGR	
	2025E	2026E	2027E	20-24A	24-27E
Key Operating Metics					
MAU (mn)	134.0	160.7	189.6	*30.9%*	*20.7%*
% YoY	*24.3%*	*20.0%*	*18.0%*		
Paid Subcribers (mn)	11.1	13.0	14.8	*59.3%*	*22.4%*
% YoY	*37.6%*	*17.7%*	*13.3%*		
Monthly Rev ($)	6.6	7.3	7.7	*(5.3%)*	*7.0%*
% YoY	*4.4%*	*11.7%*	*5.0%*		
Key Financials					
Subscription Revenue					
Team Estimates	873	1,148	1,366	*50.8%*	*31.0%*
Consensus	859	1,041	1,167	*50.8%*	*24.3%*
Delta (%)	***1.7%***	***10.3%***	***17.0%***		
% YoY - Team	*43.7%*	*31.5%*	*19.0%*		
% YoY - Consensus	*41.3%*	*21.2%*	*12.1%*		
Total Revenue					
Team Estimates	1,038	1,354	1,612	*46.7%*	*29.2%*
Consensus	1,026	1,239	1,406	*46.7%*	*23.4%*
Delta (%)	***1.1%***	***9.3%***	***14.7%***		
% YoY - Team	*38.8%*	*30.5%*	*19.1%*		
% YoY - Consensus	*37.2%*	*20.7%*	*13.4%*		
Net Income					
Team Estimates	418	284	359	*n.m.*	*55.9%*
Consensus	417	251	325	*n.m.*	*50.9%*
Delta (%)	***0.4%***	***13.4%***	***10.5%***		
% YoY - Team	*n.m.*	*(32.0%)*	*26.2%*		
% YoY - Consensus	*n.m.*	*(39.8%)*	*29.5%*		

Exit Valuation				
	2024A	2027E		
	Actual	Bear	Base	Bull
MAU (mn)	107.8	180.2	189.6	192.8
% 20-24A / 24-27E CAGR	*30.9%*	*18.7%*	*20.7%*	*21.4%*
Month Rev / Subscriber ($)	6.3	7.5	7.7	8.0
% 20-24A / 24-27E CAGR	*(5.3%)*	*5.9%*	*7.0%*	*8.5%*
Paid Subcribers (mn)	8.1	13.5	14.8	14.9
% 20-24A / 24-27E CAGR	*59.3%*	*18.8%*	*22.4%*	*22.8%*
Subscription Revenue	607.5	1,210.0	1,365.6	1,438.5
Other Revenue	140.5	235.1	246.8	252.3
Total Revenue	**748.0**	**1,445.2**	**1,612.5**	**1,690.8**
% 20-24A / 24-27E CAGR	*46.7%*	*24.5%*	*29.2%*	*31.2%*
Gross Profit	544.4	1,064.4	1,225.5	1,301.9
% Margin	*72.8%*	*73.7%*	*76.0%*	*77.0%*
Net Income	**94.5**	**262.2**	**358.6**	**419.0**
% Margin	*12.6%*	*18.1%*	*22.2%*	*24.8%*
EPS, Basic	**$ 2.136**	**$ 5.684**	**$ 7.773**	**$ 9.084**
EPS, Diluted	**$ 2.086**	**$ 5.316**	**$ 7.270**	**$ 8.495**
Exit P/E		30.0x	30.0x	35.0x
Price Target ($)		**$ 159.48**	**$ 218.10**	**$ 297.33**
MoM		**0.9x**	**1.3x**	**1.7x**
IRR		**(7.7%)**	**26.2%**	**72.1%**

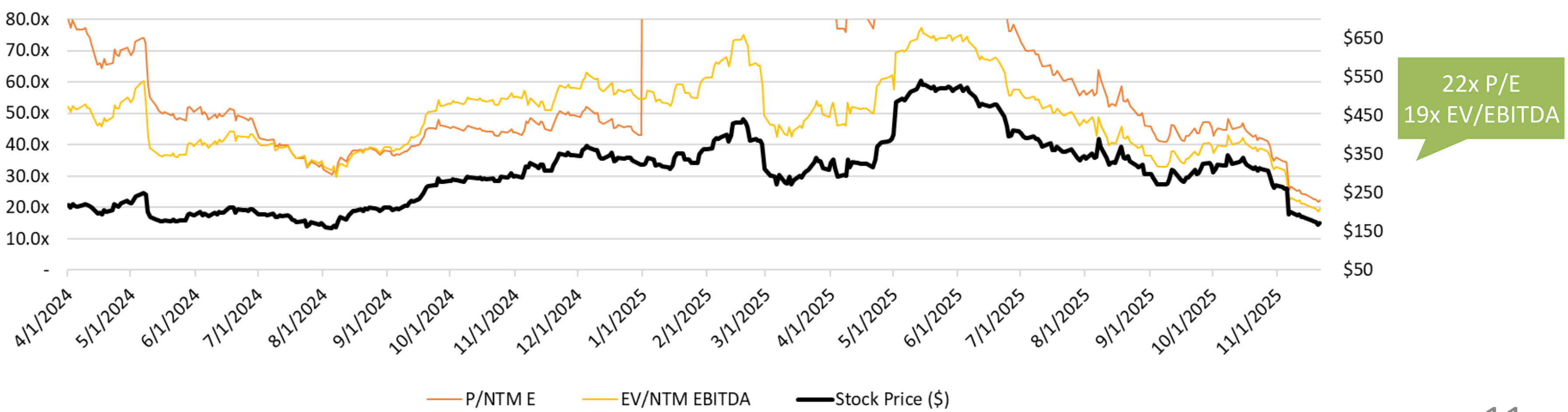
Valuation

Understanding source of return and where we stand on multiple

Source of Return



Trading Multiple



Risks to Valuation

While key valuation risks exist, we believe DUOL is well-positioned to mitigate and deliver the performance

Risk	Explanation	Mitigants
Accelerated improvement in GenAI real-time translation tools	*Rapid progress in AI translation hardware (earbuds, glasses) or LLM-based real-time translation (e.g., ChatGPT / Google Ultra) could lead to* ***intensified market fear***	*Company is actively integrating AI and leveraging it in a positive way; the current biz model also provides* ***shield against AI threat***
New subjects' monetization uncertainty	*Expansion into new subjects (Math, Music, Chess) may take time to demonstrate monetization potential, while heavy investment could temporarily dilute margins.*	***More AI features and new functionality added*** *to keep engagement at high levels and gradually converting users to pay*
Slower subscriber conversion in emerging markets	*As Duolingo expands aggressively into* ***lower-income regions*** *(APAC, LATAM, India), conversion rates from free users* ***to paid subscribers may lag, pressuring ARPU***	*Localized pricing, and AI-driven personalization improve retention and conversion over time. Operating leverage* ***allows profitability with lower ARPU markets.***

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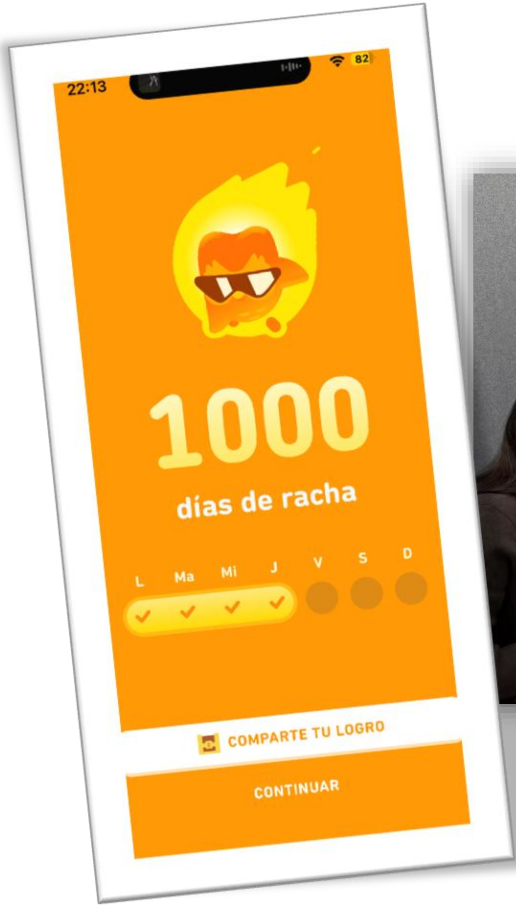
Questions?



Appendix

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Comps

DUOL Comps

Nov 21, 2025		Mkt Cap	EV	EV/EBITDA			P/E			2024A						Rev YoY %			NI YoY %		
Company Name	Location	($mm)	($mm)	2023A	2024A	2025E	2023A	2024A	2025E	Rev ($mm)	GP%	EBITDA %	NI%	ROIC	FCF Conv.	2023A	2024A	2025E	2023A	2024A	2025E
Duolingo	**US**	**7,987**	**6,963**	**n.m.**	**n.m.**	**23.3x**	**n.m.**	**n.m.**	**13.8x**	**748**	**74%**	**10%**	**12%**	**7%**	**287%**	**44%**	**41%**	**38%**	**n.a.**	**451%**	**551%**
Education																					
Coursera	US	1,350	557	n.m.	n.m.	9.1x	n.m.	n.m.	20.4x	695	55%	(14%)	(11%)	(10%)	(79%)	21%	9%	8%	n.a.	n.a.	n.a.
Chegg	US	104	90	37.9x	7.3x	1.2x	72.4x	n.m.	n.m.	618	85%	10%	(136%)	6%	82%	(7%)	(14%)	(39%)	(93%)	n.a.	n.a.
Nerdy	US	127	109	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	190	68%	(36%)	(22%)	(50%)	1%	19%	(2%)	(8%)	n.a.	n.a.	n.a.
Mean				**37.9x**	**7.3x**	**5.1x**	**72.4x**	**n.m.**	**20.4x**	**501**	**69%**	**(13%)**	**(56%)**	**(18%)**	**1%**	**11.2%**	**(2.1%)**	**(12.7%)**	**(93.2%)**	**n.m.**	**n.m.**
Median				**37.9x**	**7.3x**	**5.1x**	**72.4x**	**n.m.**	**20.4x**	**618**	**68%**	**(14%)**	**(22%)**	**(10%)**	**1%**	**18.9%**	**(1.6%)**	**(7.7%)**	**(93.2%)**	**n.m.**	**n.m.**
Consumer Subscription																					
Spotify	US	120,273	114,251	n.m.	n.m.	44.9x	n.m.	69.1x	64.4x	18,023	31%	9%	7%	18%	85%	13%	18%	10%	n.a.	n.a.	43%
Netflix	US	441,995	449,754	30.4x	36.3x	32.2x	39.4x	43.7x	40.2x	39,001	47%	28%	22%	67%	202%	7%	16%	16%	20%	61%	26%
Match	US	7,618	10,698	12.8x	11.5x	8.7x	15.2x	14.9x	8.9x	3,479	75%	28%	16%	43%	89%	6%	3%	0%	80%	(15%)	55%
Bumble	US	374	1,028	18.8x	6.6x	3.4x	n.m.	n.m.	1.6x	1,072	76%	25%	(52%)	14%	30%	16%	2%	(10%)	n.a.	n.a.	n.a.
Grindr	US	2,557	2,834	20.2x	31.8x	14.8x	n.m.	n.m.	27.0x	345	78%	31%	(38%)	36%	93%	33%	33%	26%	n.a.	n.a.	n.a.
Mean				**20.6x**	**21.6x**	**20.8x**	**27.3x**	**42.6x**	**28.4x**	**12,384**	**62%**	**24%**	**(9%)**	**36%**	**100%**	**14.9%**	**14.4%**	**8.3%**	**50.2%**	**22.8%**	**41.2%**
Median				**19.5x**	**21.6x**	**14.8x**	**27.3x**	**43.7x**	**27.0x**	**3,479**	**75%**	**28%**	**7%**	**36%**	**89%**	**13.0%**	**15.6%**	**9.6%**	**50.2%**	**22.8%**	**42.8%**
Fule of 50 SaaS																					
Adobe	US	135,706	136,421	36.9x	23.1x	11.6x	50.0x	35.2x	15.2x	21,505	92%	39%	26%	47%	96%	10%	11%	10%	14%	2%	60%
Intuit	US	184,621	187,786	44.8x	40.0x	23.0x	67.7x	60.3x	30.6x	17,167	84%	27%	18%	26%	105%	11%	12%	21%	38%	13%	107%
Microsoft	US	3,508,974	3,527,337	23.5x	22.2x	19.0x	33.9x	33.8x	31.0x	261,802	79%	54%	35%	33%	38%	12%	15%	16%	22%	12%	22%
Oracle	US	566,624	667,753	18.2x	24.8x	21.2x	28.6x	40.1x	31.2x	54,933	81%	41%	21%	71%	51%	12%	6%	11%	15%	15%	56%
ServiceNow	US	168,772	165,763	n.m.	n.m.	33.6x	n.m.	n.m.	46.4x	10,984	84%	18%	13%	15%	168%	24%	22%	21%	433%	(18%)	155%
Veeva Systems	US	40,119	33,572	n.m.	42.8x	23.4x	54.7x	51.3x	30.1x	2,747	75%	26%	25%	13%	140%	11%	16%	19%	43%	17%	100%
Doximity	US	9,493	8,626	26.5x	40.1x	24.3x	37.9x	49.5x	28.8x	550	91%	42%	37%	23%	83%	17%	17%	15%	16%	46%	64%
Mean				**30.0x**	**32.2x**	**22.3x**	**45.5x**	**45.0x**	**30.5x**	**52,813**	**84%**	**35%**	**25%**	**33%**	**97%**	**13.6%**	**14.3%**	**16.2%**	**83.0%**	**12.6%**	**80.6%**
Median				**26.5x**	**32.4x**	**23.0x**	**44.0x**	**44.8x**	**30.6x**	**17,167**	**84%**	**39%**	**25%**	**26%**	**96%**	**11.5%**	**15.0%**	**16.3%**	**22.4%**	**12.9%**	**63.6%**
Game and AI																					
Roblox	US	62,647	61,533	n.m.	n.m.	38.9x	n.m.	n.m.	n.m.	3,602	34%	(23%)	(26%)	(15%)	(93%)	26%	29%	83%	n.a.	n.a.	n.a.
Eletronic Arts	US	50,053	50,992	18.6x	20.0x	20.1x	34.1x	36.6x	26.6x	7,347	84%	26%	14%	25%	89%	4%	(4%)	6%	4%	(3%)	79%
Unity	US	16,590	17,272	n.m.	n.m.	43.4x	n.m.	n.m.	43.8x	1,813	97%	(7%)	(37%)	(3%)	(494%)	57%	(17%)	1%	n.a.	n.a.	n.a.
Applovin	US	175,824	177,670	14.4x	48.2x	39.3x	37.5x	68.8x	47.6x	4,709	85%	49%	34%	73%	79%	17%	43%	22%	n.a.	343%	134%
Mean				**16.5x**	**34.1x**	**35.4x**	**35.8x**	**52.7x**	**39.3x**	**4,368**	**75%**	**11%**	**(4%)**	**20%**	**(105%)**	**26%**	**13%**	**28%**	**4%**	**170%**	**107%**
Median				**16.5x**	**34.1x**	**39.1x**	**35.8x**	**52.7x**	**43.8x**	**4,156**	**84%**	**9%**	**(6%)**	**11%**	**(7%)**	**21%**	**12%**	**14%**	**4%**	**170%**	**107%**

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Model Buildup

	Historical					Forecast					CAGR		
	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	20-24A	24-27E	25-29E
Income Statement													
MAU (Period Avg.)	36.7	40.5	54.0	79.6	107.8	134.0	160.7	189.6	220.9	254.1	30.9%	20.7%	17.4%
% YoY / QoQ		10.4%	33.4%	47.4%	35.4%	24.3%	20.0%	18.0%	16.5%	15.0%			
Ref: Consensus						134.0	150.7	180.9	217.0	249.6			
% vs. Consensus						-	6.6%	4.8%	1.8%	1.8%			
(x) % MAU conversion to EoP F	3.4%	5.1%	6.2%	6.8%	7.5%	8.3%	8.1%	8.5%	8.5%	8.4%	191.8%		
BoP	0.9	1.6	2.5	4.2	6.6	9.5	12.7	13.4	16.1	18.7	64.6%	26.7%	18.4%
EoP	1.6	2.5	4.2	6.6	9.5	12.7	13.4	16.1	18.7	21.2	56.1%	19.3%	13.8%
Paid Subscribers (Period Avg.)	**1.3**	**2.1**	**3.4**	**5.4**	**8.1**	**11.1**	**13.0**	**14.8**	**17.4**	**19.9**	**59.3%**	**22.4%**	**15.8%**
% YoY / QoQ		64.0%	63.4%	61.2%	49.1%	37.6%	17.7%	13.3%	17.7%	14.6%			
Ref: Consensus EoP						13.5	12.5	14.7	17.6	20.2	59.3%	22.4%	10.6%
% vs. Consensus						(6.3%)	7.8%	10.0%	6.2%	4.9%			
(x) Monthly Rev / Paid Subscriber	7.8	7.3	6.8	6.2	6.3	6.6	7.3	7.7	8.0	8.4	(5.3%)	7.0%	6.3%
% YoY / QoQ		(6.2%)	(7.4%)	(8.2%)	0.7%	4.4%	11.7%	5.0%	4.5%	4.0%			
Subscription Revenue	**117.5**	**180.7**	**273.5**	**404.7**	**607.5**	**873.1**	**1,147.9**	**1,365.6**	**1,680.3**	**2,003.4**	**50.8%**	**31.0%**	**23.1%**
% YoY / QoQ		53.8%	51.4%	48.0%	50.1%	43.7%	31.5%	19.0%	23.0%	19.2%			
Ref: Consensus						858.7	1,040.9	1,167.0	1,415.6	1,693.3	50.8%	31.0%	18.5%
% vs. Consensus						1.7%	10.3%	17.0%	18.7%	18.3%			
Advertising Revenue	**27.0**	**38.5**	**44.7**	**49.9**	**54.9**	**76.9**	**96.2**	**120.2**	**144.3**	**170.2**	**19.4%**	**29.9%**	**22.0%**
% YoY / QoQ		42.4%	16.2%	11.5%	10.1%	40.1%	25.0%	25.0%	20.0%	18.0%			
Duolingo English Test Revenue	**15.2**	**24.7**	**32.7**	**41.2**	**45.6**	**43.7**	**54.3**	**62.4**	**71.8**	**82.6**	**31.7%**	**11.0%**	**17.2%**
% YoY / QoQ		62.7%	32.7%	26.0%	10.7%	(4.2%)	24.2%	15.0%	15.0%	15.0%			
Other Revenue	**2.0**	**6.9**	**18.5**	**35.4**	**39.9**	**44.2**	**55.8**	**64.2**	**73.8**	**84.9**	**111.5%**	**17.1%**	**17.7%**
% YoY / QoQ		246.3%	168.1%	90.7%	13.0%	10.8%	26.1%	15.0%	15.0%	15.0%			
Total Revenue	**161.7**	**250.8**	**369.5**	**531.1**	**748.0**	**1,038.0**	**1,354.2**	**1,612.5**	**1,970.1**	**2,341.1**	**46.7%**	**29.2%**	**22.5%**
% YoY / QoQ		55.1%	47.3%	43.7%	40.8%	38.8%	30.5%	19.1%	22.2%	18.8%			
Ref: Consensus						1,026.5	1,239.0	1,405.7	1,701.2	2,030.4	46.7%	29.2%	18.6%
% vs. Consensus						1.1%	9.3%	14.7%	15.8%	15.3%			
COGS	(46.0)	(69.2)	(99.4)	(142.1)	(203.6)	(286.2)	(328.1)	(387.0)	(468.9)	(552.5)	45.1%	23.9%	17.9%
% Rev	(28.4%)	(27.6%)	(26.9%)	(26.8%)	(27.2%)	(27.6%)	(24.2%)	(24.0%)	(23.8%)	(23.6%)			
Gross Profit	**115.7**	**181.6**	**270.1**	**389.0**	**544.4**	**751.8**	**1,026.1**	**1,225.5**	**1,501.2**	**1,788.6**	**47.3%**	**31.1%**	**24.2%**
% Margin	71.6%	72.4%	73.1%	73.2%	72.8%	72.4%	75.8%	76.0%	76.2%	76.4%			
Net Income	**(15.9)**	**(60.2)**	**(58.2)**	**16.2**	**94.5**	**418.2**	**284.2**	**358.6**	**535.8**	**693.5**	n.m.	55.9%	13.5%
% Margin	(9.8%)	(24.0%)	(15.8%)	3.0%	12.6%	40.3%	21.0%	22.2%	27.2%	29.6%			
Ref: Consensus						416.7	250.7	324.6	450.9	602.4	n.m.	55.9%	9.7%
% vs. Consensus						0.4%	13.4%	10.5%	18.8%	15.1%			

Key Debate - Substitute Threat Evaluation

For Learning		For Tool/On-the-spot conversation	
Duolingo	**AI learning chatbot**	**Real-time translation hardware**	**Real-time translation software**
Free tier (ad-supported); Super/Max: $7-20 /month	*Usually free/basic access; paid tiers or if using custom tutor*	*Device purchase typically $150–$400+*	*ChatGPT+ ~$20/month*
Asynchronous, practice-focused, ***Gamified experience**;* ***High habit formation** (streaks, XP, gamification).*	*Simulate conversations, provide explanations, curriculum and feedback.* *Not as gamified;* ***Depends on prompt design and model quality.***	*Near-instant literal translation of spoken words; Good for on-the-spot comprehension in live contexts (travel/business).* ***Conversation flow may be awkward (latency, missed nuance).***	*Rapid translation, text & voice. Works well for typed or voice-to-text scenarios; not built for developing skills.* ***Conversation flow may be awkward (latency, missed nuance).***

Duolingo wins where humans are naturally lazy: most people won't self-drive a years-long language journey with ChatGPT, but Duolingo lowers cognitive load and keeps them engaged through structure, gamification, and habit loops.

How AI accelerates the business

Three areas of opportunities: Effective learning, efficiency improvement and monetization

1 More Effective Learning

Potential Upside

- Gen AI enables **new learning formats** and **accelerates content velocity**
- Improved tools may help users achieve **higher proficiency**

Features & Impact

- Scaled **DuoRadio** from **100K to 5.5M DAUs** via generated content
- Faster content creation enabled **expansion to more courses**

2 Internal Efficiencies

Potential Upside

- Gen AI can lead to **greater efficiency in content production**
- **Automate** manual processes

Features & Impact

- DuoRadio content produced at a **99% lower cost**
- Reduced manual QA regression testing by ~70%
- **~10x increase in content creation**

3 Monetization

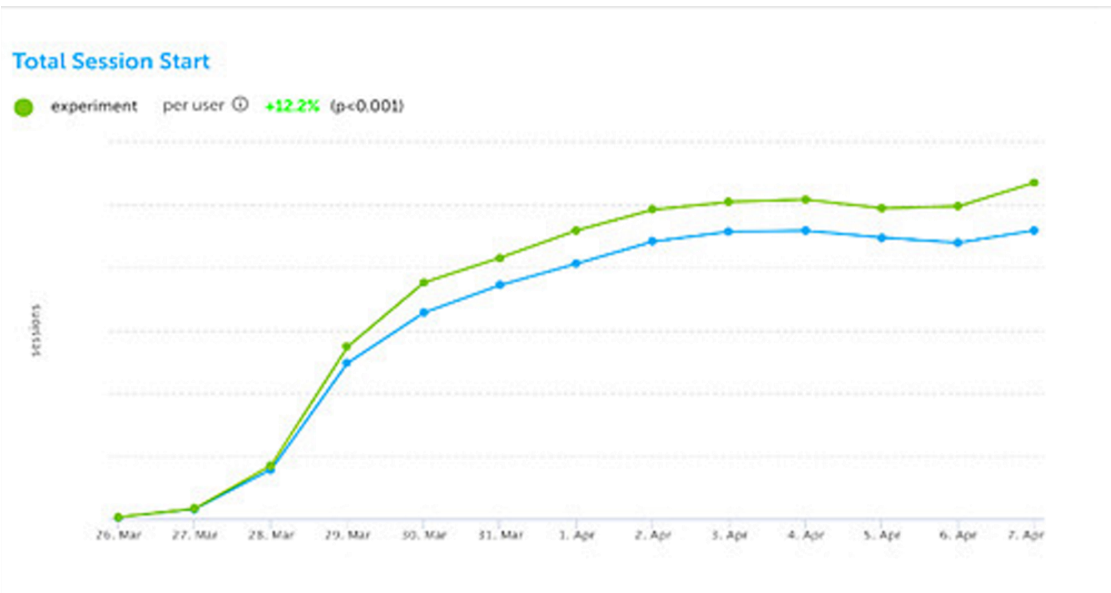
Potential Upside

- Initial Gen AI features have increased **revenue per user**
- Better address the **$115B market** for D2C language learning

Features & Impact

- **Duolingo Max** subscription tier focused on Generative AI features has reached **~5% of subs** at a **>$50M annualized run rate**

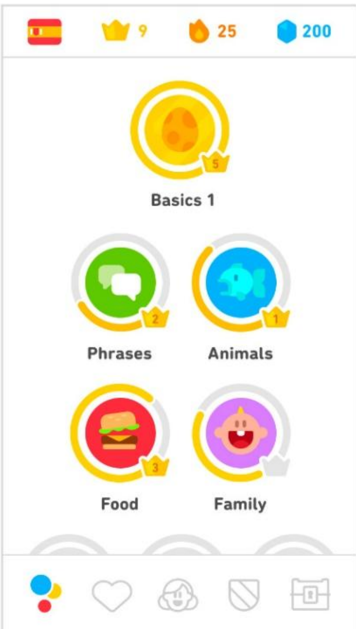
Core competitiveness – A/B Test and data accumulation

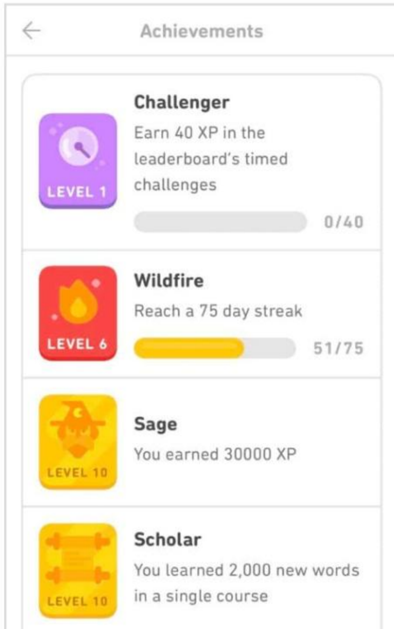


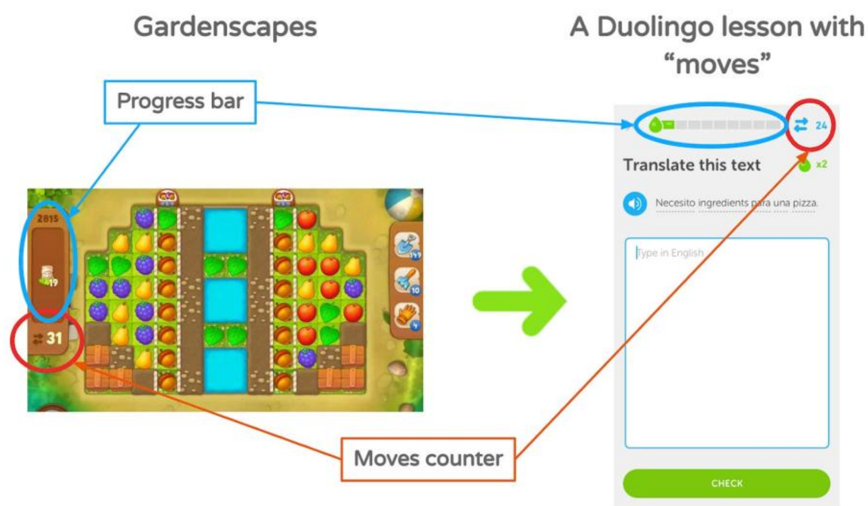
'Test everything' is the company's core methodology: Duolingo ***runs more than 750 A/B tests every quarter****, continually accumulating new know-how, prioritizing improvements in user engagement and retention,* ***and optimizing monetization only in ways that do not compromise long-term user value****.*

This vast body of know-how cannot be built overnight or copied and pasted — it requires massive user data and years of iterative experimentation, and ***it is not something an LLM can simply replicate with a single configuration.***

Duolingo’s increasing gamification helps retention



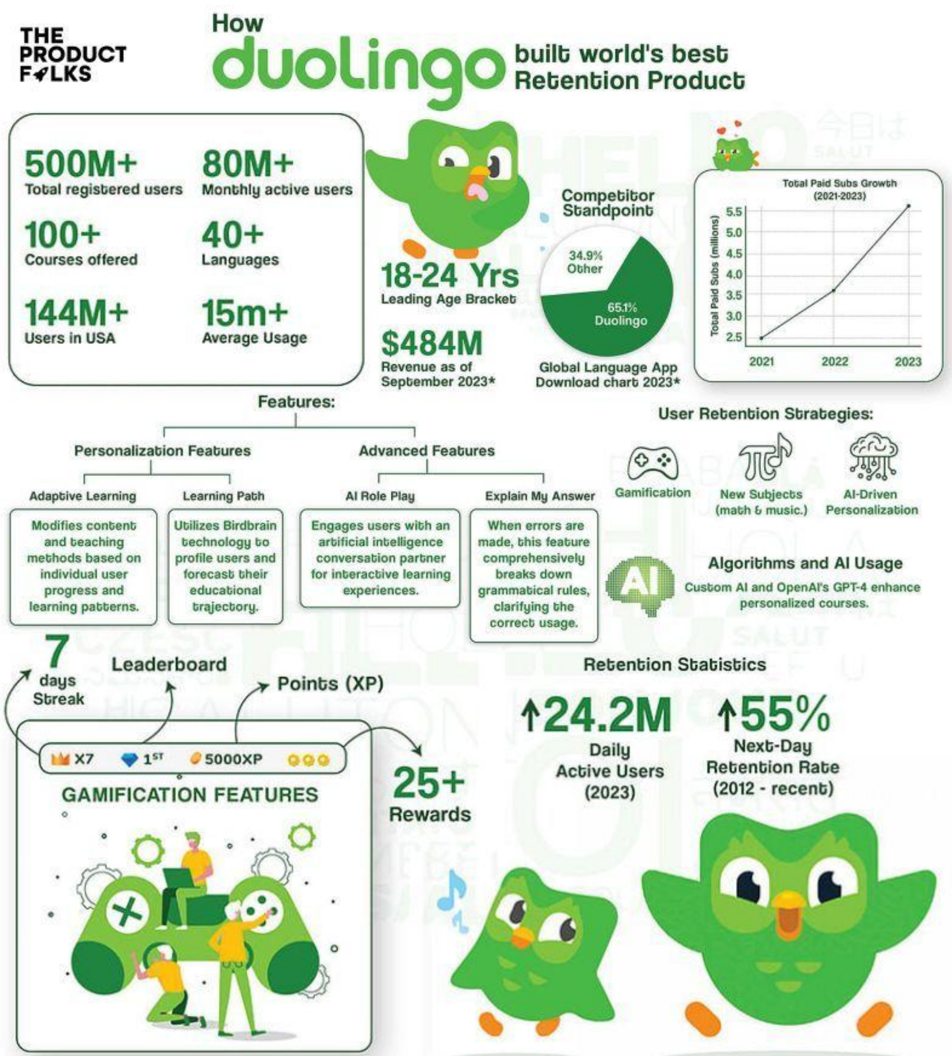


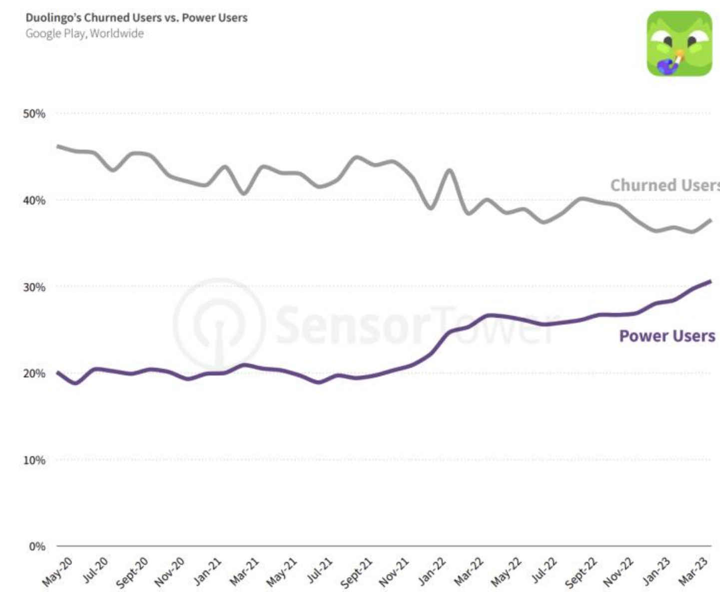


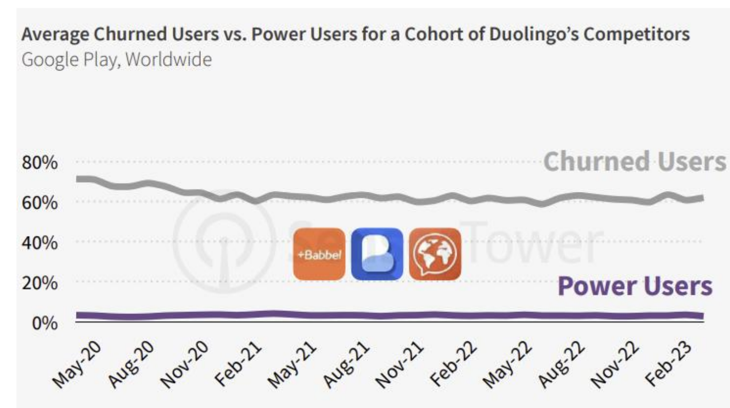
***Gamification meaningfully boosts Duolingo’s engagement and retention, powering a data-driven growth flywheel**.*

- *After introducing leaderboards, total learning time increased by ~17% and the number of high-intensity learners nearly doubled.*
- *Social features like ‘Friends Quest’ raise the likelihood of completing a daily lesson by ~22%.*
- *Optimizing streak thresholds lifted the number of users achieving a 7-day streak by ~40%*
- *The initial launch of badges alone drove a 2.4% increase in DAU, a 13% lift in paid conversion, and a 116% jump in friend referrals.*
- *Continuous product iteration has improved current user retention (CURR) by ~21% from 2019 to 2022, driving a ~4.5 × increase in DAU, expanding the share of heavy learners from ~20% to 30%+, and reducing overall churn from ~47% to ~37%.*

Retention: Power users accumulate while churned users decrease



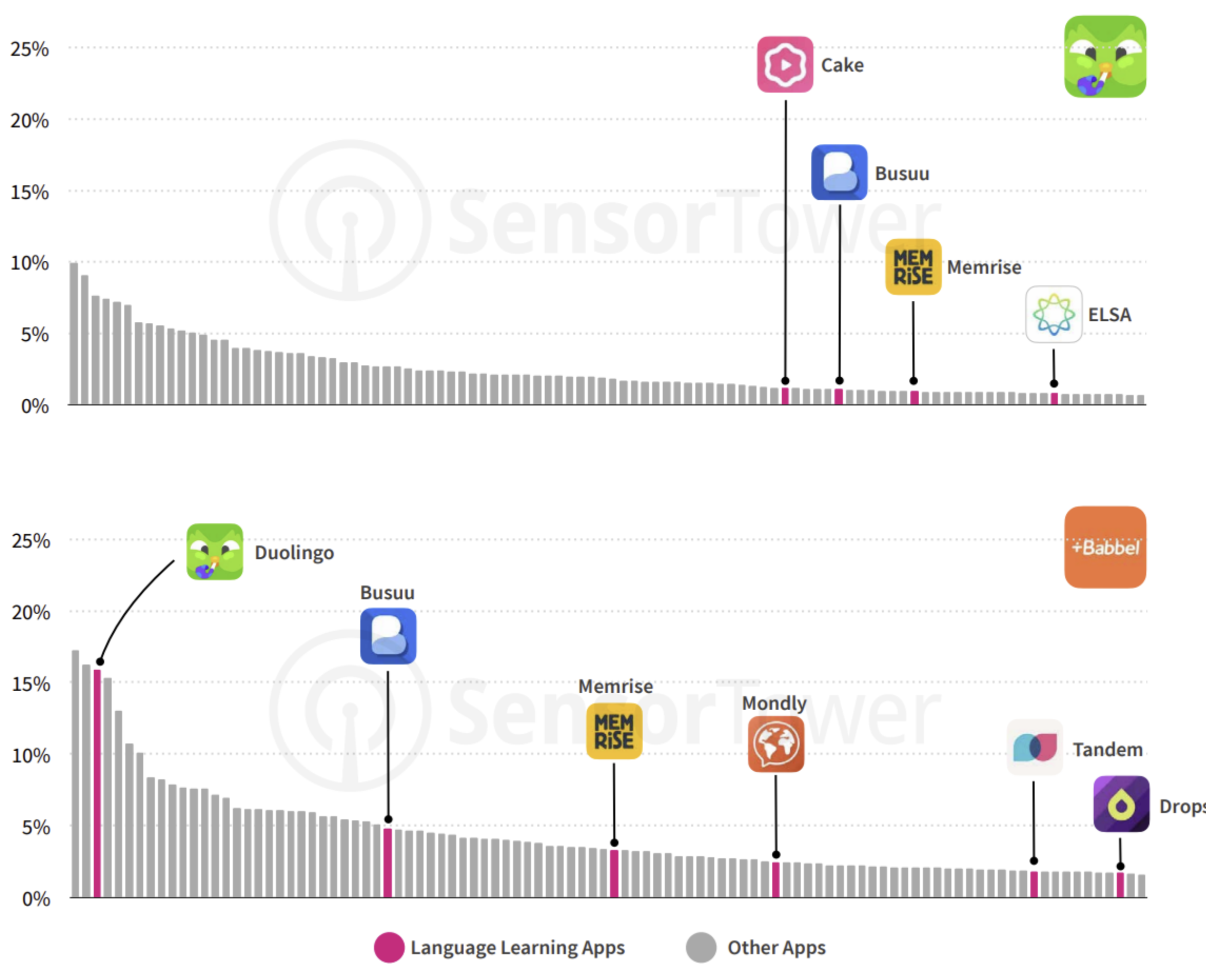




Retention: Duolingo's users show strong loyalty to the app

Duolingo and Babbel Users' Likelihood of Using Other Apps Within 30 Days

Q1 2023, Google Play



Duolingo's users exhibit a remarkable loyalty to the app, as competing language learning apps are not among the top choices for Duolingo users. In Q1 2023, Duolingo's Google Play users preferred using Cake, ranked 67th in usage over a 30-day period.

Users of Babbel, a main competitor of uolingo, tend to use other language apps more frequently, indicating less exclusivity. For instance, during a similar 30-day period, Duolingo ranked as the third most used app among Babbel users in Q1 2023, while Busuu, Memrise, and Mondly also appeared in the top 67 most used apps.

Key Management Overview

Luis von Ahn, Ph.D. has served as our Chief Executive Officer and a member of our board since founding Duolingo with Severin Hacker in August 2011. Previously, he served as the Chief Executive Officer of reCAPTCHA from 2007 until its acquisition by Google in 2009. Luis holds a B.S. in Mathematics from Duke University and a Ph.D. in Computer Science from Carnegie Mellon University

Severin Hacker, Ph.D. has served as our Chief Technology Officer and a member of our board since co-founding Duolingo with Luis von Ahn in August 2011. Severin holds a B.S. in Computer Science from Eidgenossische Technische Hochschule Zurich, Switzerland, and a Ph.D. in Computer Science from Carnegie Mellon University.

Robert Meese is our Chief Business Officer and has worked at Duolingo since September 2016. From August 2008 to September 2016, he held various roles at Google, most recently as Director, Global Head of Games Business Development, Google Play. Robert holds a B.S. in Economics and a B.S. in Computer Science from the University of Pennsylvania and an M.B.A. from the Massachusetts Institute of Technology.

Matthew Skaruppa has served as our Chief Financial Officer since February 2020. From January 2016 to February 2020, he served as Vice President of Goldman Sachs. Previously, Matthew served as Principal at KKR Capstone from 2010 to 2015 and as a consultant at Bain & Company from 2004 to 2008. Matthew holds a B.S. in Chemical Engineering from Northwestern University and an M.B.A. from the Stanford Graduate School of Business.

Natalie Glance, Ph.D. is our Chief Engineering Officer and has worked at Duolingo since March 2015. From 2007 to 2015, she served as an Engineering Manager at Google. Natalie holds a B.A. in Physics from Princeton University and a Ph.D. in Physics from Stanford University.

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Key Management Overview

Stephen Chen has served as our General Counsel since March 2020. From July 2014 to February 2020, he served as Associate General Counsel for Proofpoint, an enterprise security company. He previously served as Associate General Counsel of Marin Software; Director and Senior Counsel, Mergers and Acquisition at VMWare; and Legal Director of Yahoo!. Stephen holds a B.A. in History and a J.D. from Harvard University.

Manu Orssaud is the Chief Marketing Officer of Duolingo, where he is responsible for building the brand and driving user growth globally. He joined Duolingo in September 2020, initially focused on brand building across international markets. Prior to this, Manu worked at Spotify leading Global Marketing Strategy for the music technology company, and was responsible for the award-winning Wrapped annual campaign. Manu also spent 9 years at Sony PlayStation developing the digital marketing function across EMEA for the global entertainment brand.

Ryan Sims is the Chief Design Officer of Duolingo, where he is responsible for creating a delightful product experience and brand. Since joining in November 2018, he has grown Design from a small team of designers into a creative powerhouse. Prior to Duolingo, Ryan was the Head of Product Design at Stripe and the Head of Design for Rdio.

Cem Kansu is our Chief Product Officer and has worked at Duolingo since September 2016. Previously, he led Duolingo's monetization efforts and the launch of Duolingo's subscription products. Cem holds a B.S. in Industrial Engineering from Bilkent University, a M.Eng. in Financial Engineering from Cornell University and an M.B.A. from the Wharton School at the University of Pennsylvania.