AI Reshapes Business Models

Idea In Short

Generative AI models, capable of producing text, translation, images and conversational responses on demand, have moved from experimental tools into core infrastructure for how some companies create and deliver value. Duolingo, the language-learning app, offers one of the clearest public examples: the company built a premium subscription tier around GPT-4-powered features in 2023, then declared itself an AI-first company in 2025, reshaping both its product and its workforce around generative AI. That shift also triggered public backlash after Duolingo cut contract translators whose work AI models could increasingly replicate. This article explains how generative AI changes the mechanics of a business model, not just its products, using Duolingo's product changes, staffing decisions and financial results as a running example throughout.

Duolingo Max and the GPT-4 Bet

Duolingo launched Duolingo Max in March 2023, a premium subscription tier built around two features powered by OpenAI's GPT-4: Explain My Answer, which gives learners a conversational breakdown of why an answer was right or wrong, and Roleplay, which lets users practice conversations with an AI character in realistic scenarios. Both features required capabilities Duolingo's existing exercise formats could not deliver, open-ended conversational responses tailored to each learner's specific mistake, something that would have been prohibitively expensive to script by hand for every possible error.1

The tier priced meaningfully higher than Duolingo's standard subscription, betting that learners would pay a premium for AI-generated, personalized feedback that felt more like tutoring than drilling. That bet extended beyond the product itself into how Duolingo produced content behind the scenes, using GPT-4 to translate sentences and generate exercises, with human experts then validating that the output met teaching standards for each language's proficiency framework.

The Contractor Layoffs and the Backlash

Duolingo cut roughly 10% of its contractor workforce at the end of 2023, declining to renew contracts for workers whose translation and content-creation tasks increasingly overlapped with what its AI content pipeline could produce. The company's chief marketing officer said the decision was not directly tied to AI use, a framing that drew skepticism given the timing coincided directly with Duolingo's AI content rollout.2

> Duolingo ended contracts with about 10% of its contractor workforce at the end of 2023, as AI tools took over parts of the translation and content work those contractors had done.

The reaction from users and former contractors was immediate and sustained, with public criticism accusing the company of using AI as cover to cut costs at the expense of workers who had built the courses the app depended on. That criticism resurfaced and intensified in April 2025, when Chief Executive Luis von Ahn published a memo describing Duolingo as

becoming an "AI-first" company.

Going AI-First

Von Ahn's April 2025 memo set out a policy for the whole organization: teams would phase out contractors for tasks AI could handle, and headcount requests for new hires would require proof that the work could not be automated. The memo also noted that generative AI had already let Duolingo launch 148 new language courses in under a year, a volume of course development that had previously taken the company more than a decade to produce.3

The announcement triggered a visible public reaction beyond the earlier contractor layoffs, including a temporary drop in the company's app store ratings and renewed criticism on social media platforms where users accused Duolingo of prioritizing automation over the human expertise that built its course content. Duolingo's stock price also declined in the weeks following the memo, reflecting investor uncertainty about how the market would read a consumer-facing AI-first strategy rather than confidence that cost savings would follow.4

What the Financial Results Show

Despite the public backlash, Duolingo's subscriber and revenue numbers grew through 2025. The company surpassed 10 million paid subscribers in the first quarter of 2025, with revenue up 38% year over year, then reported 41% revenue growth and 46% subscription revenue growth in the second quarter. For the full year, Duolingo recorded $1.03 billion in revenue against total bookings of $1.15 billion, alongside more than 50 million daily active users.5

Those numbers suggest that whatever reputational cost the AI-first strategy carried among vocal critics, it did not visibly slow the growth of Duolingo's paying user base. The company's ability to launch new courses far faster than its pre-AI content pipeline allowed likely contributed directly to that growth, since a larger course catalog gives Duolingo more languages and skill combinations to convert into paying subscribers.

What Other Companies Can Take From This

Duolingo's case illustrates a distinction worth drawing for any company considering a similar

shift: adding an AI feature to an existing product is different from restructuring the underlying cost base and labor model around AI capability. Duolingo did both, first layering GPT-4 features onto a new subscription tier, then later rebuilding its content production pipeline and hiring policy around the assumption that AI would handle work previously done by contractors. The first move added revenue without disrupting the existing organization. The second move changed the organization itself, and it was the second move that produced the public backlash.

Companies weighing this kind of shift face a real tradeoff rather than a purely technical decision: the labor cost savings and production speed gains are measurable and, in Duolingo's case, appear to have translated into faster course expansion and revenue growth. The reputational and workforce disruption costs are real too, harder to quantify, and can surface well after the initial announcement, as Duolingo's April 2025 memo and the ratings drop that followed showed.

Key Partners

Duolingo's most consequential AI partnership is with OpenAI, whose GPT-4 model powers Duolingo Max features and much of the company's AI-generated course content. App store platforms, including Apple's App Store and Google Play, remain essential distribution partners for reaching new users. Advertising partners support the free, ad-supported tier of the app for users who have not converted to a paid subscription.

Key Activities

Course and curriculum development, now substantially restructured around AI-assisted translation and exercise generation, remains Duolingo's central activity. Human review and validation of AI-generated content continues as a distinct activity, since the company still relies on language experts to confirm that AI output meets teaching standards. Product development for the app itself, along with marketing to acquire and retain users across a large base of free and paying subscribers, rounds out the company's operations.

Key Resources

Duolingo's proprietary learning data, built from hundreds of millions of user interactions over more than a decade, gives the company a training and personalization advantage that a new

entrant could not easily replicate. Its relationship with OpenAI and the underlying GPT-4 technology represents a critical external resource embedded directly into the product. The Duolingo brand and its large existing user base function as resources in their own right, since course expansion and new features only generate revenue if enough users are already in the app to encounter them.

Value Propositions

For free users, Duolingo offers gamified, low-cost language practice supported by advertising rather than a subscription fee. For Duolingo Max subscribers, the value proposition centers on AI-powered conversational practice and personalized explanations that approximate one-on-one tutoring at a fraction of the cost. For all users, the rapid expansion of available courses and languages, enabled by AI-assisted content production, gives Duolingo a breadth of offerings that would have taken years longer to build under its earlier, fully human content pipeline.

Customer Relationships

Duolingo maintains its relationship with most users through the app itself, using gamification mechanics like streaks and leaderboards to encourage daily engagement without direct human interaction. Subscribers to Duolingo Max get a more personalized relationship through AI-driven feedback and roleplay conversations, simulating the responsiveness of a human tutor. Customer support for billing and account issues remains a more traditional, human-staffed function separate from the AI-driven learning experience itself.

Channels

The Duolingo mobile app, available on iOS and Android, serves as the primary channel through which nearly all users access the product. The company's website offers a browser-based version of the same core learning experience. Social media and app store rankings function as significant discovery channels, particularly given how visibly public reactions to Duolingo's AI strategy played out on those same platforms.

Customer Segments

Casual language learners using the free, ad-supported tier make up the largest share of

Duolingo's user base, drawn by gamified practice rather than a specific proficiency goal. Paying subscribers, including the more than 10 million people on paid plans by early 2025, represent a smaller but faster-growing segment willing to pay for an ad-free experience and, on the Max tier, AI-powered conversational features. Schools and educational institutions form a smaller segment, using Duolingo's classroom tools to supplement formal language instruction.

Cost Structure

Technology and AI infrastructure costs, including compute and licensing tied to models like GPT-4, represent a growing share of Duolingo's expenses as AI features expand across the product. Personnel costs have shifted in composition, with a smaller contractor-driven translation budget offset by continued spending on engineering, content review and AI oversight roles. Marketing and user acquisition costs remain substantial given the competitive market for language-learning apps, alongside standard administrative and platform costs tied to running a global mobile app.

Revenue Streams

Subscription revenue, spanning Duolingo's standard and Max tiers, makes up the majority of the company's income and grew fastest in 2025 following the AI-first product push. Advertising revenue from the free tier provides a secondary but meaningful income stream, monetizing the large base of users who never convert to a paid plan. Duolingo English Test fees, paid by students and institutions using the company's language proficiency exam, round out its revenue base as a smaller but distinct stream from its core consumer app.

- 1Duolingo Launches GPT-4 Powered Subscription Tier
- 2Duolingo Cuts Contractor Workforce Amid AI Shift
- 3Duolingo CEO Announces AI-First Company Strategy
- 4Duolingo Stock Falls Following AI-First Backlash
- 5Duolingo Reports Record 2025 Revenue And Subscriber Growth

Summary

Duolingo's experience shows that generative AI does not just add a feature to an existing business model, it can rewrite the cost structure and value proposition underneath it. Replacing a portion of a human translation and content workforce with AI-generated output cut costs and let Duolingo publish course content far faster than before, a change reflected in both its revenue growth and its public reputation. The company's 2025 subscriber growth suggests the AI-first bet paid off financially, even as the contractor layoffs drew sustained criticism from users and former workers. Any company weighing a similar shift faces the same tradeoff Duolingo did: generative AI can lower costs and speed up production, but the human labor it displaces does not disappear quietly, and the backlash can shape brand perception as much as the efficiency gains shape the balance sheet.