Pulley

IRC 409A & ASC 718

Common Stock Valuation Prepared For

Every Media Inc

Valuation Date as of May 26, 2025

Report Issued on Jun 5, 2025

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Engagement Overview

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Prolific Labs Inc. d/b/a Pulley (“Pulley,” “our,” “us,” “we”) was engaged by Dan Shipper to provide an estimate of the fair market value and fair value of one common share in the Every Media Inc (the “Company” or Every Media Inc) on a minority, non-marketable basis (the “Subject Interest”) as of May-26-2025 (the 'Valuation Date') for tax and financial reporting purposes. It is our understanding that our valuation of the Subject Interest will be used to comply with section 409a of the Internal Revenue Code “IRC” and the Financial Accounting Standards Board (“FASB”) Topic 718 of the Accounting Standards Code (“ASC”). The valuation report should not be used for any other purpose without prior written consent from Pulley.

Standard of Value

For tax reporting purposes, the standard of value to be used in our analysis is fair market value which is defined in IRS Revenue Ruling 59-60 as:

> The price at which the property would change hands between a willing buyer and willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.

For financial reporting purposes, the standard of value to be used in our analysis is fair value, which is defined in FASB ASC Topic 718 as:

> The amount at which an asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale.

We are unaware of any circumstance in which the definition of fair market value and the definition of fair value would result in a different conclusion of value. As a result, fair market value and fair value will be used interchangeably throughout this report.

Scope of Work

In our analysis, we applied valuation techniques and methodologies consistent with American Institute of Certified Public Accountants (“AICPA”) recommended practices as outlined in their Accounting and Valuation Guide titled “Valuation of Privately-Held-Company Equity Securities Issued as Compensation” (the “AICPA Valuation Guide”). A summary of our analysis and findings are shown on the following page. A more detailed discussion of our analysis and findings are presented throughout the report.

Summary

	Fully Marketable Common	DLOM	FMV - Common	Weight
Going Concern	$0.10	60.00%	$0.0385	100.00%
Weighted Total			**$0.0385**	**100.00%**

Going Concern:

Methodology:

Guideline Public Company Method ('GPC Method'): Trading multiples are derived from the trading price and financial metrics of publicly traded companies that are deemed similar to the subject company. The trading multiples are then applied to the subject company's financial metrics to determine the value of the subject.

Discount for lack of marketability (DLOM):

A DLOM is a quantitative discount applied to the concluded fully marketable value of common to factor in the illiquidity of a Company’s privately-held shares. Factors considered include but are not limited to: Time to a liquidity event (e.g IPO, Acquisition), business risks, secondary activity, and seller restrictions. Please refer to the DLOM section of this report for additional information.

Company Overview

Business description

The Company is a media and software company

The Company generates recurring revenue from subscription fees. In return, clients have ongoing access to the Company's products and services. To increase revenue, the Company focuses on retaining existing customers and attracting new ones through marketing and customer service efforts.

The Company was formed on June 15, 2020

Risks

Company Specific Risks

- The Company is an early stage company with limited operating history. At this stage of development, execution risk is very high.
- The Company is operating at a loss and will need additional capital to achieve its projected results and to continue to operate as a going concern.
- The Company competes against more established firms with greater access to capital.
- The Company has several major milestones it needs to achieve in order to be profitable.

Capitalization Table

Name	Shares Outstanding	Options	Warrants	Total
Common	5,470,948	533,971	0	6,004,919

Share Class - Rights and Preferences

Name	Seniority [1]	OIP	Liquidation Preference Multiple	Cumulative Dividends (Y/N)	Dividend Rate	Conversion Ratio	Participation (Y/N)	Participation Cap
Common [2]	1	—	—	—	—	1.00	—	
Stock Options - $0.01	1	—	—	—	—	1.00	—	
Stock Options - $0.0385 [3]	1	—	—	—	—	1.00	—	

Convertible Debt

ID	Conversion Type	Principal	Interest Rate	Valuation Cap	Conversion Discount
SAFE-1	Post-Money	$292,204.00		$6,000,000.00	
SAFE-2	Post-Money	$7,796.00		$6,000,000.00	
SAFE-3	Post-Money	$5,000.00		$6,000,000.00	
SAFE-4	Post-Money	$5,000.00		$6,000,000.00	
SAFE-5	Post-Money	$5,000.00		$6,000,000.00	
SAFE-6	Post-Money	$10,000.00		$6,000,000.00	
SAFE-7	Post-Money	$5,000.00		$6,000,000.00	
SAFE-8	Post-Money	$25,000.00		$6,000,000.00	
SAFE-9	Post-Money	$5,000.00		$6,000,000.00	
SAFE-10	Post-Money	$5,000.00		$6,000,000.00	
SAFE-11	Post-Money	$10,000.00		$6,000,000.00	
SAFE-12	Post-Money	$5,000.00		$6,000,000.00	
SAFE-13	Post-Money	$5,000.00		$6,000,000.00	
SAFE-14	Post-Money	$10,000.00		$6,000,000.00	
SAFE-15	Post-Money	$1,000.00		$6,000,000.00	
SAFE-16	Post-Money	$1,000.00		$6,000,000.00	
SAFE-17	Post-Money	$5,000.00		$6,000,000.00	
SAFE-18	Post-Money	$5,000.00		$6,000,000.00	
SAFE-19	Post-Money	$25,000.00		$6,000,000.00	
SAFE-20	Post-Money	$5,000.00		$6,000,000.00	
SAFE-21	Post-Money	$25,000.00		$6,000,000.00	
SAFE-22	Post-Money	$5,000.00		$6,000,000.00	
SAFE-23	Post-Money	$8,000.00		$6,000,000.00	
SAFE-24	Post-Money	$1,500.00		$6,000,000.00	

1. The lower the number, the more senior the security in the liquidation hierarchy.
2. Includes shares expected to be issued subsequent to the Valuation Date
3. Expected to be issued subsequent to the Valuation Date

ID	Conversion Type	Principal	Interest Rate	Valuation Cap	Conversion Discount
SAFE-25	Post-Money	$5,000.00		$6,000,000.00	
SAFE-26	Post-Money	$25,000.00		$6,000,000.00	
SAFE-27	Post-Money	$10,000.00		$6,000,000.00	
SAFE-28	Post-Money	$25,000.00		$6,000,000.00	
SAFE-29	Post-Money	$5,000.00		$6,000,000.00	
SAFE-30	Post-Money	$25,000.00		$6,000,000.00	
SAFE-31	Post-Money	$5,000.00		$6,000,000.00	
SAFE-32	Post-Money	$5,000.00		$6,000,000.00	
SAFE-33	Post-Money	$5,000.00		$6,000,000.00	
SAFE-34	Post-Money	$10,000.00		$6,000,000.00	
SAFE-35	Post-Money	$10,000.00		$8,000,000.00	
SAFE-36	Post-Money	$5,000.00		$8,000,000.00	
SAFE-37	Post-Money	$25,000.00		$8,000,000.00	
SAFE-38	Post-Money	$15,000.00		$8,000,000.00	
SAFE-39	Post-Money	$10,000.00		$8,000,000.00	
SAFE-40	Post-Money	$1,500.00		$8,000,000.00	
SAFE-41	Post-Money	$5,000.00		$8,000,000.00	
SAFE-42	Post-Money	$5,000.00		$8,000,000.00	
SAFE-43	Post-Money	$10,000.00		$8,000,000.00	
SAFE-44	Post-Money	$25,000.00		$8,000,000.00	
SAFE-45	Post-Money	$250,000.00		$25,000,000.00	0.00%
SAFE-46	Post-Money	$250,000.00		$25,000,000.00	
SAFE-47	Post-Money	$50,000.00		$25,000,000.00	

Financial Information

Balance Sheet (04/30/2025)	
Cash and Cash Equivalents	$742,895
Fixed Assets (Net)	$0
Total Assets	$742,895
Non Convertible Debt	$0
Total Liabilities	$0
Equity	$742,895

	Previous Twelve Months (05/01/2023 - 04/30/2024)	Last Twelve Months (05/01/2024 - 04/30/2025)	Next Twelve Months (05/01/2025 - 04/30/2026)	2025 (01/01/2025 - 12/31/2025)	2026 (01/01/2026 - 12/31/2026)
Revenue	$1,102,620	$1,552,232	$1,857,903	$1,931,321	$2,000,000
EBITDA	$126,409	$-247,991	$-57,661	$-378,812	$-200,000

Valuation Analysis

To determine the fair market value of the Subject Interest in our analysis, the following steps were taken:

Step 1 - Determine the value of the Company using an appropriate methodology(ies)

Step 2 - Allocate the value of the Company to the various share classes taking into account share classes economic rights and preferences

Step 3 - Apply a discount for lack of marketability (“DLOM”) to the resulting per share value of common

Step 4 - Analyze any secondary transactions that have incurred in the past and determine to what extent they should be considered relevant in determining the value of the Subject Interest in the analysis

Methodology Discussion

The AICPA Valuation Guide recommends three generally accepted methodologies for estimating the value of an enterprise; the asset, market, and income approaches. While there are only three approaches, in practice, various techniques can be used within each approach. Due to the underlying characteristics of each approach, there may be instances in which one approach is more relevant than another. Below is a brief description of each approach and commentary discussing which methodology was deemed more relevant in our analysis. When applicable, approaches that rely on observable inputs to a greater degree were prioritized over alternative approaches that require more judgment.

Asset Approach - this approach focuses on determining the net asset value (“NAV') of an enterprise, which is defined as the fair value of the assets less liabilities.

> **Cost to Recreate** - the Cost to Recreate method is an asset-based approach that focuses on the cost associated with building or replicating a business from the ground up. The cost to recreate method involves estimating the cost of acquiring all the necessary assets to recreate the business, including labor, materials, and other expenses.

The Asset Approach is typically reserved for very early stage companies that have not yet raised an arms-length equity financing or have yet to monetize its product or offering. In these particular instances, it’s difficult to employ other methodologies as inputs can be highly unpredictable or non-existent.

Market Approach - this approach focuses on determining the value of an enterprise by looking at the market observable selling price of other similar enterprises or past transactions in the subject entity itself. There were three valuation methods within the market approach that were considered in our analysis; the Guideline Public Company Method, the Guideline Company Transactions Method, and the Subject Company Transactions Method commonly referred to as the Backsolve Method.

Guideline Public Company Method ("GPC Method") - in this approach trading multiples are derived from the trading price and financial metrics of publicly traded companies that are deemed similar to the subject company. The trading multiples are then applied to the subject company's financial metrics to determine the value of the subject.

The GPC Method is often used to value companies that have (or confidently expects to have in the near term) meaningful revenues or earnings.

Guideline Company Transactions Method ("GTC Method") - in this approach deal multiples are derived from the sale price and financial metrics of recently acquired companies that are deemed similar to the subject. The deal multiples are then applied to the subject company's financial metrics to determine the value of the subject.

The GTC Method can be used to value companies that have (or confidently expects to have in the near term) meaningful revenues or earnings. However, a major limitation of this approach is that the sale price of a target company in an acquisition can oftentimes have indiscernible levels of control premiums and synergies included in the sale price that are deal specific, which makes it difficult to infer value of another company using the transaction data.

Subject Company Transaction Method ("Backsolve Method") - in this approach, a transaction involving the subject company's own securities is used to "back into" the implied value of the subject.

The Backsolve Method is often used when the subject company completes a financing round near the valuation date that involves the sale of equity securities (e.g. preferred shares) to investors. When this occurs, the Backsolve Method is typically the preferred valuation approach as the primary input used to value the subject is based on observable market prices in the subject company's equity. The strength of the financing round as an indicator of value is enhanced by the sophistication level of participating investors and the degree in which the transaction is considered arms-length.

Income Approach - under this approach, a company is valued by discounting future benefit streams expected to be generated by the business (e.g. cash flows) into a single current amount using a risk-adjusted rate of return.

One of the major limitations of the Income Approach is its heavily reliant on management forecasts and other unobservable inputs. As a result, this approach is typically reserved for valuing later-stage companies that have visibility into long-term results. Early-stage companies with limited operating history oftentimes have difficulty providing reliable forecasts as the future can be highly uncertain at this stage.

Selected Approach

Given that the Company has meaningful historical or projected financial metrics, it was determined that the Guideline Public Company Method would be a reasonable method to value the Company in our analysis.

Guideline Public Company Method ('GPC Method')

Guideline Public Company - Metrics

Sales Growth					
		Last Twelve Months (05/01/2024 - 04/30/2025)	Next Twelve Months (05/01/2025 - 04/30/2026)	2025 (01/01/2025 - 12/31/2025)	2026 (01/01/2026 - 12/31/2026)
AREN	The Arena Group Holdings, Inc.	-41.9%	N/A	N/A	N/A
BZFD	BuzzFeed, Inc.	N/A	N/A	N/A	N/A
FUTR-GB	Future Plc	1.5%	4.7%	-3.0%	2.6%
GCI	Gannett Co., Inc.	-7.0%	-4.5%	-6.0%	-2.6%
ZD	Ziff Davis, Inc.	3.2%	4.8%	4.3%	3.8%
Min		-41.9%	-4.5%	-6.0%	-2.6%
10th		-31.5%	-2.7%	-5.4%	-1.6%
25th		-15.8%	0.1%	-4.5%	-0.0%
Median		-2.8%	4.7%	-3.0%	2.6%
Mean		-11.1%	1.7%	-1.5%	1.3%
75th		1.9%	4.8%	0.7%	3.2%
90th		2.7%	4.8%	2.9%	3.5%
Max		3.2%	4.8%	4.3%	3.8%
Every Media Inc		**40.8%**	**19.7%**	**N/A**	**3.6%**
Range		**Max**	**Max**		**90th - Max**

EBITDA Growth					
		Last Twelve Months (05/01/2024 - 04/30/2025)	Next Twelve Months (05/01/2025 - 04/30/2026)	2025 (01/01/2025 - 12/31/2025)	2026 (01/01/2026 - 12/31/2026)
AREN	The Arena Group Holdings, Inc.	1432.6%	N/A	N/A	N/A
BZFD	BuzzFeed, Inc.	N/A	N/A	N/A	N/A
FUTR-GB	Future Plc	-10.4%	10.8%	-3.2%	3.9%
GCI	Gannett Co., Inc.	-5.1%	28.9%	1.0%	4.1%
ZD	Ziff Davis, Inc.	1.5%	15.4%	4.8%	5.2%
Min		-10.4%	10.8%	-3.2%	3.9%
10th		-8.8%	11.7%	-2.4%	4.0%
25th		-6.4%	13.1%	-1.1%	4.0%
Median		-1.8%	15.4%	1.0%	4.1%
Mean		354.6%	18.4%	0.9%	4.4%
75th		359.3%	22.2%	2.9%	4.7%
90th		1003.3%	26.2%	4.0%	5.0%
Max		1432.6%	28.9%	4.8%	5.2%
Every Media Inc		**-296.2%**	**-76.7%**	**N/A**	**-47.2%**
Range		**Min**	**Min**		**Min**

Size ($ in Millions)				
		Revenue	Equity Value	Total Assets
AREN	The Arena Group Holdings, Inc.	$129	$321	$115
BZFD	BuzzFeed, Inc.	N/A	$76	$203
FUTR-GB	Future Plc	$989	$970	$2,216
GCI	Gannett Co., Inc.	$2,445	$500	$1,952
ZD	Ziff Davis, Inc.	$1,416	$1,301	$3,516
Min		$129	$76	$115
10th		$387	$174	$150
25th		$774	$321	$203
Median		$1,202	$500	$1,952
75th		$1,673	$970	$2,216
90th		$2,136	$1,168	$2,996
Max		$2,445	$1,301	$3,516
Every Media Inc		**$2**	**$2**	**$1**
Range		**Min**	**Min**	**Min**

Guideline Public Company - Multiple Analysis

MVIC/Revenue				
Company	Last Twelve Months (05/01/2024 - 04/30/2025)	Next Twelve Months (05/01/2025 - 04/30/2026)	2025 (01/01/2025 - 12/31/2025)	2026 (01/01/2026 - 12/31/2026)
The Arena Group Holdings, Inc.	3.4x	—	—	—
BuzzFeed, Inc.	—	—	—	—
Future Plc	1.4x	1.4x	1.9x	1.8x
Gannett Co., Inc.	0.7x	0.7x	0.7x	0.7x
Ziff Davis, Inc.	1.5x	1.5x	1.5x	1.4x
Min	0.7x	0.7x	0.7x	0.7x
10th	0.9x	0.9x	0.9x	0.9x
25th	1.2x	1.0x	1.1x	1.1x
Median	1.5x	1.4x	1.5x	1.4x
Mean	1.8x	1.2x	1.4x	1.3x
75th	2.0x	1.4x	1.7x	1.6x
90th	2.9x	1.4x	1.8x	1.7x
Max	3.4x	1.5x	1.9x	1.8x
Multiple Selected	**1.0x**	—	—	—

Guideline Public Company - Concluded Value

	Metric	Multiple	MVIC	Less: Non-Convertible Debt	Plus: Cash and Cash Equivalents	Plus: Non-Operating Assets	Adjusted MVIC	Weight
LTM Multiples								
MVIC/ Revenue	$1,552,232	1.0x	$1,552,232	$0	N/A	N/A	$1,552,232	100%

Equity Value: $1,552,232

The following factors were considered when selecting a multiple(s) to be applied to the Company's financial metrics in our analysis:

The following factors were considered when selecting a multiple(s) to be applied to the Company's financial metrics in our analysis:

Historical Performance and Outlook

The following summarizes the Company's performance during the LTM period as provided by Management:

- The Company performed in-line with expectations.

Comparable Company - Relative Performance

The Company’s size indicators such as Revenue, Equity Value and Total Assets fall towards the lower end of the range when compared to the publicly traded comparable companies. From a growth perspective, the Company ranks near the median of the range in Sales and EBITDA growth year over year.

Risk Profile

The Company exhibits a relatively higher risk profile in comparison to the guideline public companies, characterized by its limited operating history and lack of customer diversification. These factors introduce uncertainties regarding future performance and growth prospects. Additionally the Company operates in a competitive industry with many players which presents further challenges and limitations related to gaining market share.

Multiple Selection

Based on the fact set above, we selected a LTM MVIC/Revenue multiple near the 10th percentile of the range of the guideline public comparable companies.

Discussions with Management indicated that forward looking performance is highly speculative. Accordingly, it was determined that using the historical LTM would result in the most reasonable indication of value.

Concluded Company Value - Guideline Public Company Method

Based on our analysis, we determined that the adjusted MVIC of the subject Company under the GPC Method is $1,552,232 as of the Valuation Date.

Weighted Equity Value

Methodology	Adjusted MVIC	Weight
GPC Method	$1,552,232.00	100%

Weighted Total: $1,552,232.00

Allocation of Value

According to the AICPA Valuation Guide, there are four generally accepted methodologies for allocating the value of an enterprise to the various share classes; the current value method, the option pricing method, the probability-weighted expected return method, and the hybrid method. Below is a brief description of each methodology including commentary as to which methodology is considered most relevant in our analysis.

Current Value Method ("CVM") - under this allocation method an immediate sale of the subject company is assumed to take place and the estimated current value of the subject is allocated to the various share classes based on the rights afforded to each class, assuming each class of shareholder will seek to maximize its value.

A major limitation of the CVM model is it assumes the sale of the company occurs immediately and thus ignores any future upside or downside scenarios that could occur when the company actually exits. For this reason, this allocation method should only be used when an exit event (e.g. dissolution or acquisition) is imminent or when the determination of the company operating as a going concern is irrelevant as the company has made little to no progress to date.

Option Pricing Method ("OPM") - within an OPM framework, each share class is treated like a call option on the current enterprise value or equity value. The math is analogous to assigning a log-normal distribution to the current value of the company and allocating each potential exit value within the assigned distribution to the share classes based on the rights afforded to each class. The resulting share class values from the OPM is equivalent to the average value from all potential exit scenarios.

In an OPM framework, a Black-Scholes model is typically used to determine the call option values. Other option valuation methodologies, such as binomial models or monte-carlo simulations, are preferred when the capital structure is complex or when share class payoffs are path dependent. Based on the Company's capital structure, the Black-Scholes model was considered the preferred methodology in our analysis.

The disadvantage of the OPM is it assumes future exit values for a company can be modeled implicitly using a log-normal distribution, whereas in reality, some companies may have greater upside or downside potential than this type of distribution would suggest. Despite its limitations, the AICPA Valuation Guide states that the OPM is most appropriate when the range of future outcomes for a company is difficult to predict.

Probability-Weighted Expected Return Method ("PWERM") - under this allocation method, all future exit events for the subject company are discretely modeled and the exit values within each scenario are allocated to the various share classes based on the rights afforded to each class, assuming each class of shareholder will seek to maximize its value. Probabilities are then assigned to each exit scenario and the probability-weighted per unit share values from all the scenarios is calculated. The weighted per share value of common is then present valued to the valuation date using a risk-adjusted rate of return.

The PWERM is a forward-looking model in which all future outcomes for the business are explicitly modeled. For this reason, the model can be conceptually appealing, however, it can be difficult to implement as it requires detailed assumptions around future exit events that may be unavailable or highly subjective. As a result, the PWERM is most appropriate for companies that are close to an exit and have visibility into what future exit events may look like for the business.

Hybrid Method ("Hybrid") - under this allocation method the valuation specialist runs multiple scenarios using both the PWERM and the OPM to allocate the value of the company in each scenario. The resulting share values from each scenario are then probability-weighted based on the likelihood of each scenario occurring.

According to AICPA Valuation Guide, the hybrid method can be a useful alternative to explicitly modeling all

PWERM scenarios in situations when the company has transparency into one or more near-term exits, but is unsure about what will occur if the current plans fall through. An OPM allocation model is often used in the “going-concern scenario” in which the exit plans are assumed to fall through, as the OPM model is an effective way to model the distribution of future potential outcomes for a business that does not have clear visibility in the future.

Selected Allocation Method

The Company continues to progress internally, yet has no visibility into future potential exit events. Given the difficulty in estimating discrete future outcomes for the Company in its current state, the OPM was selected as the preferred allocation methodology in our analysis.

Option Pricing Method

In our analysis, we used a Black-Scholes OPM model to allocate the concluded equity value of the Company to the various share classes as of the Valuation Date.

Black-Scholes OPM Inputs

The Black-Scholes OPM utilizes several key inputs as follows:

- Capitalization structure
- Shareholder rights and preferences
  - Seniority among shareholders
  - Liquidation preferences
  - Conversion ratios
  - Dividend policy
- Time to liquidity
- Expected volatility
- Risk-free rate

Time to Liquidity

The time to liquidity assumption reflects the probability-weighted time to exit ("PWTE") considering all future potential exit events for a company. An expected exit can take the form of an initial public offering ("IPO"), an acquisition, or a dissolution.

A PWTE of 1.5 years was selected as the time to liquidity assumption in our analysis. Our selection reflects a weighted measure that incorporates a potential dissolution for the Company in about 1.0 years when the Company's cash position is expected to be depleted and a successful exit (i.e. IPO or acquisition) for the Company in about 5.0 years based on discussions with management.

Expected Volatility

As a private company, the Company lacks daily trading volume to calculate volatility. As such, expected volatility of the Subject Company is estimated based on the historical volatilities of the guideline publicly traded companies.

An asset volatility of 55.0% was selected in our analysis.

Risk-free Rate

A risk-free rate of 4.1% was relied on in our analysis. The rate selected reflects the treasury rate as of the allocation date that coincides with a 1.5 year term.

No 1. Allocation - Option Pricing Model

#	From	To	Delta	Black Scholes	Distributed Value	Description	Participating Shares
1	$0	$1,258,000	$1,258,000	$572,737	$979,495	SAFE (Post-Money) - $25,000,000, SAFE (Post-Money) - $6,000,000, SAFE (Post-Money) - $8,000,000 receives principal	

#	From	To	Delta	Black Scholes	Distributed Value	Description	Participating Shares
2	$1,258,000	$1,312,709	$54,709	$546,304	$26,433	Common participates	5,470,948
3	$1,312,709	$1,472,685	$159,975	$476,105	$70,199	Stock Options - $0.01 exercises	5,613,168
4	$1,472,685	$6,429,370	$4,956,686	$15,922	$460,183	Stock Options - $0.0385 exercises	6,004,919
5	$6,429,370	$8,357,495	$1,928,125	$5,956	$9,966	SAFE (Post-Money) - $6,000,000 converts to common	6,695,362
6	$8,357,495	$24,983,495	$16,626,000	$24	$5,932	SAFE (Post-Money) - $8,000,000 converts to common	6,792,158
7	$24,983,495	Remainder			$24	SAFE (Post-Money) - $25,000,000 converts to common	6,944,946

No 2. Payout Allocation

#	Common	Stock Options - $0.01	Stock Options - $0.0385	SAFE (Post-Money) - $25,000,000	SAFE (Post-Money) - $6,000,000	SAFE (Post-Money) - $8,000,000	Total
1	0.00%	0.00%	0.00%	43.72%	47.42%	8.86%	100.00%
2	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
3	97.47%	2.53%	0.00%	0.00%	0.00%	0.00%	100.00%
4	91.11%	2.37%	6.52%	0.00%	0.00%	0.00%	100.00%
5	81.71%	2.12%	5.85%	0.00%	10.31%	0.00%	100.00%
6	80.55%	2.09%	5.77%	0.00%	10.17%	1.43%	100.00%
7	78.78%	2.05%	5.64%	2.20%	9.94%	1.39%	100.00%

No 3. Value Allocated

#	Common	Stock Options - $0.01	Stock Options - $0.0385	SAFE (Post-Money) - $25,000,000	SAFE (Post-Money) - $6,000,000	SAFE (Post-Money) - $8,000,000
1	$0	$0	$0	$428,237	$464,442	$86,815
2	$26,433	$0	$0	$0	$0	$0
3	$68,420	$1,779	$0	$0	$0	$0
4	$419,263	$10,899	$30,022	$0	$0	$0
5	$8,144	$212	$583	$0	$1,028	$0
6	$4,778	$124	$342	$0	$603	$85
7	$19	$0	$1	$1	$2	$0
Total Value	$527,057	$13,014	$30,948	$428,237	$466,075	$86,900
Total Shares	5,470,948	142,220	391,751			
Per Unit Value - Fully Marketable	$0.10	$0.09	$0.08			

Volatility Analysis - Allocation

Guideline Public Companies	Equity Volatility [4]	Equity Value	Interest-bearing debt	Total Invested Capital	N(d1)	N(d2)	Implied Asset Value	Implied Asset Volatility
AREN	155.98%	$320.73	$119.90	$440.63	0.94	0.48	$397.39	133.37%
BZFD	97.47%	$76.46	$55.04	$131.51	0.93	0.76	$124.22	64.25%
FUTR-GB	55.35%	$969.60	$432.01	$1,401.62	1.00	0.99	$1,375.39	39.12%
GCI	65.07%	$500.31	$1,204.51	$1,704.82	0.93	0.89	$1,618.77	21.61%
ZD	40.62%	$1,300.51	$864.83	$2,165.34	1.00	1.00	$2,113.96	25.00%

Percentile	Equity Volatility	Implied Asset Volatility
Min	40.62%	21.61%
10th percentile	46.51%	22.96%
25th percentile	55.35%	25.00%
Median	65.07%	39.12%
average	82.90%	56.67%
75th percentile	97.47%	64.25%
90th percentile	132.58%	105.72%
Max	155.98%	133.37%

Selected Asset Volatility [5] 55.0%

4. Annualized volatility based on the standard deviation of continuously compounded daily returns of historical stock prices. The lookback period is in-line with the PWTE assumption used in the OPM allocation model.
5. The Company is more early stage and less diversified than the publicly traded comparable companies, making the Company's stock price inherently more volatile. As a result, a volatility selection in the high end of the range was considered reasonable.

Discount for lack of marketability

The Subject Interest represents a minority, non-marketable interest in a privately-held company. As a stakeholder in a privately-held company, the Subject Interest does not trade in an active market and certain restrictions imposed by the issuer prevents access to markets altogether. Furthermore, as a minority interest holder, the Subject Interest does not have control over timing of an exit nor does it have access to information that a potential buyer would demand in order to perform due diligence on the Company prior to investing. Considering these factors, the Subject Interest cannot be readily converted into cash and a downward marketability adjustment (hereinafter referred to as a “discount for lack of marketability”) needs to be applied to the Subject Interest in our analysis as a result.

Put Option Pricing Models

Put option pricing models are commonly used in practice to estimate the discount for lack of marketability ("DLOM") for private company interests. The value derived from a put option model reflects the cost associated with protecting a risky investment from a downward reduction in price for a specified period of time. A DLOM results from the inability to readily sell an investment, thus the value of an at-the-money put option can be used as a proxy for what it would cost a stakeholder to protect themselves from any downside risk during a period in which the subject investment cannot be readily sold. In our analysis, we estimated a range of DLOMs using commonly known put option pricing models shown as follows:

Chaffe Put Option Model

Term [6]	Risk Free Rate [7]	Common Stock Volatility	Put Option Value	Implied DLOM
5.0	4.08%	113.80%	0.632257	63.23%

Asian Put Option Model

Term [8]	Risk Free Rate [9]	Common Stock Volatility	Put Option Value	Implied DLOM
5.0	4.08%	113.80%	0.644895	64.49%

6. Represents the estimated timeline to a successful exit. According to the AICPA Valuation Guide, it is reasonable to estimate the DLOM based on the full time to liquidity, considering only successful exits for the company.
7. Reflects the treasury rate as of the Valuation Date that coincides with the term assumption.
8. Represents the estimated timeline to a successful exit. According to the AICPA Valuation Guide, it is reasonable to estimate the DLOM based on the full time to liquidity, considering only successful exits for the company.
9. Reflects the treasury rate as of the Valuation Date that coincides with the term assumption.

Share Class Volatility

A key input when calculating an estimated DLOM using put option pricing models is volatility. When a company has a complex capital structure and certain share classes receive proceeds prior to others in a hypothetical exit (e.g. preferred shareholders get their liquidation preference before common stock get any exit proceeds), it can be assumed that the more junior share classes have a higher risk profile than senior classes. In practice, when this occurs, the company's overall estimated volatility cannot uniformly be relied on to predict the underlying volatility for each share class as the classes with a higher risk profile would elicit higher volatility and the less risky classes, lower volatility. To account for the varying degree of risk associated with each class, when calculating DLOMs for certain share classes using put option methods, the AICPA Valuation Guide suggests calculating volatility specific to each class ("share class volatility'') using the company's overall estimated volatility as an input to the calculation.

Breakpoint	N(d1)	Incremental N(d1)	Common
1	0.77	0.23	0.00
2	0.75	0.02	0.02
3	0.69	0.06	0.06
4	0.05	0.65	0.59
5	0.02	0.03	0.02
6	0.00	0.02	0.02
7	00	0.00	0.00
		Class N(d1)	0.70
		Share Class Volatility	113.80%

In our analysis, we are concerned with estimating a marketability discount to be applied to the marketable value of one common stock in the Company. As a result, the share class volatility calculated specifically for common stock shown above of 113.8% was used as the volatility input into the put option pricing model(s) shown previously.

Restricted Stock - Comparative Analysis Approach

Restricted stock studies are commonly used in practice to estimate the discount for lack of marketability ("DLOM") for private company interests. The term "restricted stock" refers to securities issued by public companies that cannot be sold in the public markets for a set period of time due to securities laws and regulations. While restricted from trading in the public markets for a set period of time, restricted shares can be sold in the private markets to accredited investors during the holding period. Restricted stock studies look at the transaction price for private placements versus the public equivalent trading price. The percentage difference between the two transacted prices (transaction discount) is used as a proxy for marketability discounts.

In our analysis, we relied on restricted stock transaction data from the Stout Restricted Stock Study (the "Stout Study"). The Stout Study provides access to a database of over 750 private placements involving restricted stock issued by public companies from 1980 to 2021. For each transaction, the Stout Study discloses certain transaction and company characteristics in which comparisons to a subject company can be made.

Analyzing the Data

According to the Stout Restricted Stock Study Companion Guide (the "Stout Study Guide"), the impact of investment risk on the DLOM is significant. More specifically, the Stout Study Guide observed that smaller, less profitable entities, with a higher degree of income and balance sheet risk and greater stock price volatility, tend to issue restricted stock at higher transaction discounts.

We examined the restricted stock transactions in the Stout Study database through the Valuation Date to identify any obvious trends. In doing so, we divided the sample into five groups, or quintiles, based on the size of the transaction discount reported. We then compared the median financial metrics from the companies included in each quintile to the size of the discounts reported. Similar to the Stout Study Guide, we observed a direct relationship between companies with higher risk profiles (i.e. companies with lower market values, revenues, total assets, book values, net profit margin and higher market-to-book (MTB) ratios and stock price volatility) and higher transaction discounts. See Table 1 for details related to the above mentioned analysis.

Table 1 [10]

Discount Quintile	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
High	7.4%	12.8%	20.1%	33.1%	87.0%
75th	5.7%	11.4%	18.0%	28.7%	53.7%
Median	3.9%	9.9%	15.7%	25.9%	42.7%
25th	2.1%	8.5%	14.3%	23.2%	37.0%
Low	0.0%	7.4%	12.8%	20.1%	33.3%

Characteristic	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Subject Company
Market Value	$225.4	$239.5	$176.1	$131.7	$71.3	$1.6
Revenues	$35.8	$47.0	$27.1	$22.0	$9.7	$1.6
Total Assets	$127.5	$104.6	$48.7	$33.8	$13.2	$0.7
Book Value of Equity	$58.1	$50.8	$26.5	$17.7	$7.6	$0.7
MTB Ratio	2.6	3.7	4.0	5.8	6.2	2.1

10. All data in this table was sourced from the Stout Restricted Stock Study database. The results shown include all transactions reported through 06-30-2022. All financial data was adjusted for inflation as of 06-30-2022 using the U.S. Bureau of Labor Statistics Consumer Price Index.

Characteristic	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Subject Company
Net Income	$(5.3)	$(3.1)	$(3.7)	$(5.3)	$(3.6)	$(0.2)[11]
Net Profit Margin	-4.3%	-5.4%	-6.3%	-23.1%	-39.1%	-16.0%
Volatility	64.1%	65.8%	73.0%	80.7%	104.0%	—
# Transactions	157.0	151.0	154.0	153.0	154.0	—

As shown in Table 1, from a financial perspective, the Company was most similar to the companies in Quintile 5. To get a better understanding of how the Company compared to the companies in Quintile 5, we dissected the data further by splitting the transactions in Quintile 5 into four sub-groups based on the size of the transaction discounts reported. We again compared the financial metrics of the subject Company to the median reported financial metrics from the companies in each sub-group. The results from this analysis are presented in Table 2.

Table 2

Characteristic	5a	5b	5c	5d	Subject Company
Market Value	$99.8	$54.9	$58.2	$62.7	$1.6
Revenues	$14.8	$7.9	$12.9	$2.7	$1.6
Total Assets	$21.0	$12.7	$17.4	$7.1	$0.7
Book Value of Equity	$7.5	$8.6	$8.2	$2.8	$0.7
MTB Ratio	6.1	5.9	7.5	5.9	2.1
Net Income	$(5.5)	$(3.2)	$(3.1)	$(4.9)	$(0.2)[12]
Net Profit Margin	-64.5%	-33.3%	-17.5%	-183.5%	-16.0%
Volatility	84.0%	87.9%	102.8%	136.4%	—
# Transactions	40.0	37.0	38.0	39.0	—
Average Holding Period	1.37	1.57	1.43	1.15	5.00
Block Size	7.8%	16.0%	12.9%	14.7%	<1%

Discount Quintile	5a	5b	5c	5d
High	37.1%	42.5%	53.2%	87.0%
75th	36.0%	41.4%	49.3%	70.0%
Median	35.3%	40.0%	46.7%	62.3%
25th	34.5%	38.5%	44.4%	56.8%
Low	33.3%	37.1%	42.9%	53.6%

As shown in Table 2, from a financial perspective, the Company was most similar to the companies in Subgroup 5D and thus the risk profile of the Company can be considered comparable to the companies within that particular group.

To arrive at a reasonable DLOM for the Subject Interest, we identified differences between the Subject Interest and the restricted stock transactions in the benchmark group. Obvious differences identified were the Subject Interest's longer holding period and the size of the Subject Interest was smaller. The Subject Interest's holding period is directly tied to a successful exit for the Company and is significantly longer than the holding period for the restricted stock in the benchmark group. The difference is exacerbated further by the fact that the Subject Interest may never achieve liquidity if the Company is not successful, while the restricted stock has a clear path

11. The Company's LTM EBITDA was used as a proxy for net income.
12. The Company's LTM EBITDA was used as a proxy for net income.

to liquidity (public markets) once the holding period is over. A longer holding period would suggest that the Subject Interest is less marketable than the benchmark group and thus a higher DLOM would be warranted. As it relates to the interest size, in theory the larger the size of the interest, the more difficult it is to find a buyer for the interest. The Subject Interest is one common share in the Company, and thus from a size perspective, could be considered more marketable than the restricted stock in the benchmark group.

Conclusion

Companies with higher risk profiles (such as smaller, less profitable entities with greater stock price volatility) tend to issue restricted stock at higher transaction discounts.

We identified a benchmark group from the Stout Study that had a similar risk profile as the subject Company. The range of reported transaction discounts from the benchmark group was used to determine a reasonable DLOM to be applied to the Subject Interest in our analysis. We considered the impact a longer holding period and a smaller interest would have on the selected DLOM. We determined that having a longer holding period coupled with greater liquidity uncertainty would have a more profound impact on the size of the marketability discount than the size of the interest itself.

All factors considered, we felt a DLOM for the Subject Interest at or near the median transaction discount reported by companies in Subgroup 5D of 62.3% was reasonable.

Concluded DLOM

Based on the put option model and restricted stock study analysis, we determined that a DLOM of 60.0% is a reasonable marketability discount to be applied to the Subject Interest in our analysis.

Secondaries

Secondary transactions in an enterprises' stock should be considered when determining the fair value of the securities within the enterprise. Determining how much weight to place on secondary market transactions versus other indications of fair value is highly subjective and depends on the facts and circumstances of each transaction.

No secondary transactions were identified for the Company near the valuation date.

Appendix

Assumptions and Limiting Conditions

Limitations and Independence

- The opinion and conclusions in this report are limited by the reported Limiting Conditions stated herein and are our personal, impartial, and unbiased professional opinions and conclusions.
- All opinions and conclusions in this report are based on facts and circumstances gathered during the engagement process. The fee charged by Pulley for this engagement is not contingent on the conclusion of value or other outcomes arrived at in this report.
- We have no present or prospective interest in the property that is the subject of this report.

Report Purpose

- The conclusion of value arrived at herein should not be used for any other purpose except for the purpose stated herein.
- This report and conclusion of value arrived at herein is not intended by us and should not be construed by the reader as representing investment, legal or tax advice of any kind.
- Nothing in this report is intended to be construed as a fairness opinion with respect to the fairness of an actual or proposed transaction, solvency opinion, or investment recommendation.
- The contents of this report may not be disseminated to the public, published, referred to in any registration statement, prospectus, loan agreement, public filing, or any other public document, in whole or in part, without Pulley's prior written consent. The contents of this report, nor the report itself, may be distributed to any third parties without Pulley's prior written consent.
- Pulley is not required to provide future services (e.g. consultation, testimony, court appearances, etc) as it relates to the contents of this report unless previous arrangements have been made in writing.
- This report is limited to issues concerning compliance with IRC §409(A). Additional issues could impact the tax treatment of assets or other interests that are subject to the report, and the report does not consider, or speak to, any additional issues. This report is not intended, and shall not, be used by any entity to avoid penalties that may be imposed on any taxpayer.

Privacy Related Matters

- Neither this report nor the contents in this report should be disseminated to the public through any means of communication without Pulley's prior written consent and approval.
- Neither this report nor the contents in this report should be disseminated to any person other than to whom this report is addressed. However, Pulley consents that the report can be shared with the Company's legal representatives, auditors providing financial statement attest services for the Company, or the IRS only as a means to assist the Company with all 409a or ASC-718 related matters.
- Pulley does not consent to be identified or named in any filings for any reason with the United States Securities and Exchange Commission (SEC).

Information and Data Collected

- During the course of our analysis, Pulley gathered information related to the business (e.g. historical financials, projections, Company updates, financing history, operational information, etc.) from the Company's management. The information gathered has been accepted without any further verification as to its accuracy, completeness, or conformity with any generally accepted accounting principles and/or other guidelines established by regulatory or other governing bodies. Thus, Pulley provides no warranty or other form of assurance as to the accuracy and completeness of the information gathered and assumes no liability for the content or accuracy of the information furnished by others.
- In our analysis, we relied on various public, financial, and industry sources. We did not independently verify the accuracy of the information provided. Thus, we do not express an opinion or other form of assurance as to the accuracy or completeness of the information.
- In our analysis, we did not attempt to determine or include the possible effects of any future legislation or regulation, or changes to interpretations thereof.
- We do not provide assurance on the achievability of any projected results forecasted by the Company. The difference between projected results and actual results could be material.
- The conclusions in this report are predicated on the assumption that the current level of management expertise and effectiveness would continue to be maintained and that the character and integrity of the business would not be materially altered by virtue of any transaction, including, but not limited to, sales or reorganizations, or diminution of the owners' participation in the business.
- All data derived from publicly traded companies in this report was derived from FactSet.

Legal Matters

- Unless stated otherwise, in our analysis, we have assumed that all of the Company's assets are free and clear of any liens and encumbrances and that the entity has good title to its assets.
- Pulley takes no responsibility for any of the Company's actual or potential environmental liabilities. Pulley does not provide environmental assessments, and has not performed one for Company.
- Pulley has not analyzed whether any Company is subject to, or in compliance with, the American Disabilities Act of 1990, and this report and valuation do not take into account any potential impacts of noncompliance on Company's valuation.

Date of Value

- This valuation shall not be considered to be reasonable if it is i) more than twelve months old or ii) if a material event has occurred that has impacted the underlying value of the Company.
- We assume no responsibility for any economic or company specific events occurring subsequent to the Valuation Date that may impact the conclusion of value in this report.

Miscellaneous

- No change shall be made to this report or the analyses contained therein by anyone other than Pulley. Pulley assumes no responsibility for any unauthorized change.
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Appraisal Team

The Pulley Valuations team has performed over 2,000 valuations for privately held companies for various purposes including but not limited to: 409a valuations, token valuations, employee stock ownership plans, gift and estate, sales and acquisitions, financial reporting, and litigation. These companies operate in various industries not limited to software development, web-3, information technology, and biotech.

Pulley Valuation team members have helped numerous companies achieve successful exits through acquisitions and IPO. These companies have a cumulative market capitalization of over $30 billion as of the exit date.

The Pulley Valuations team has extensive audit experience and has helped hundreds of clients successfully navigate ASC 718 audits. The team has collaborated with numerous regional accounting firms and all of the Big Four accounting firms.

Economic Overview

ECONOMIC UPDATE AT A GLANCE (4Q 2024 SUMMARY)

The Bureau of Economic Analysis (BEA) reported that the nation's economy—as indicated by GDP—increased at an annual rate of 2.3% in the fourth quarter of 2024, following an increase of 3.1% in the third quarter.

The fourth-quarter GDP increase reflected rises in consumer spending and government spending. These gains were partly offset by a decrease in investment and imports (which are subtracted in GDP calculations). Notably, consumer spending accelerated compared to the previous quarter.

The U.S. Leading Economic Index (LEI) decreased by 0.1% in December, to 101.6, after an upwardly revised increase of 0.4% in November. Over the six months ending in December 2024, the index fell by 1.3%—a smaller contraction than the 1.7% decline from December 2023 to June 2024. The Conference Board attributed the drop to fewer building permits, low consumer confidence about future business conditions, weak manufacturing orders, and increased initial unemployment claims. Despite these challenges, the Conference Board projected that economic growth would remain strong as 2025 begins, with GDP expanding by 2.3% over the year.

In its most recent release, the Federal Reserve Bank of Chicago reported that the Chicago Fed National Activity Index (CFNAI) increased to 0.15 in December from -0.01 in November. Two of its four broad indicator categories rose in December, and the CFNAI's three-month moving average improved from -0.26 in November to -0.13 in December. Similarly, the CFNAI Diffusion Index increased from -0.28 to -0.15.

The four-week average of initial claims for unemployment insurance in the last week of December was 211,000. For the week ending December 28, the total number of continued weeks claimed for benefits was 2,213,431—an increase of 327,136 from the previous week. In the comparable week in 2023, weekly claims across all programs were 2,130,781.

Average wages for all private employees increased by 10 cents in December (0.3%), reaching $35.69, while average hourly earnings have risen by 3.9% over the past 12 months.

In 4Q 2024, the Federal Open Market Committee (FOMC) held meetings on November 6–7 and December 17–18. During these meetings, the committee reviewed economic and financial conditions, set its monetary policy stance, and evaluated risks to its long-term goals of price stability and sustainable growth. At the November meeting, the FOMC lowered the target range for the federal funds rate by 0.25 percentage points (to 4.50%–4.75%), and at the December meeting it lowered the range by an additional 0.25 percentage points (to 4.25%–4.50%). The committee judged that the risks to its employment and inflation objectives were roughly balanced, and it continues to aim for maximum employment with a long-run inflation target of 2.0%.

The Consumer Confidence Index fell by 3.3 points in December, dropping to 109.5 from 112.8 in November. Consumers' assessments of current business and labor-market conditions, as well as their short-term outlook for income and the economy, weakened—returning to mid-range levels seen over the past two years.

MetLife and the U.S. Chamber of Commerce released their 4Q 2024 survey, which indicated that small-business owners are generally more optimistic about future revenue, investment, and hiring compared to 12 months ago. The Small Business Index now stands at 69.1—a slight decrease from 71.2 last quarter, yet higher than last year's 61.3.

The survey highlighted four key findings for the quarter:

1. A majority (72.0%) of small-business owners expect revenue to increase next year. This figure has been consistent for the past two quarters and has risen significantly from 65.0% in 4Q 2023. Nearly half (46.0%) expect to boost investment next year, and 41.0% plan to increase staff. Smaller, younger businesses—especially those owned by men, Gen Z, millennials, and Gen X—tend to be more optimistic about future growth.
2. Sixty-seven percent of small businesses report that their operations are in good health, unchanged from last quarter, and have remained relatively stable since 2Q 2022. Seventy-two percent are comfortable with their current cash flow, up from 68.0% last quarter and 67.0% a year ago. Larger small businesses, in terms of employee count, report better health and cash flow.
3. More than half (55.0%) of small-business owners stated that inflation is the biggest challenge in running their businesses. Inflation has been the primary concern for 12 consecutive quarters, with higher worries among manufacturing (69.0%) and service (57.0%) sectors compared to professional services (44.0%). Revenue challenges (25.0%) and difficulties affording employee benefits (17.0%) also rank highly.
4. Forty-two percent of small businesses reported difficulties keeping up with regulatory and compliance requirements. Seventy percent spend more per employee on compliance compared to larger competitors, with manufacturing (51.0%) and professional services (57.0%) being more affected than retail (37.0%). Additionally, 51.0% believe that licensing, certification, and permit requirements hinder business growth.

The RSM U.S. Middle Market Business Index increased by 1.4 points in 4Q 2024, rising to 131.8 from 130.4 in 3Q 2024. This improvement reflects robust business conditions driven by strong household spending, solid fixed investment, and a favorable supply-side tailwind. The index is expected to continue rising in the first two quarters of next year as firms adjust their expectations amid a lighter regulatory framework and expansionary fiscal policy. In a third-quarter survey, 44.0% of business executives noted an economic improvement, 29.0% saw no change, and 62.0% anticipated further gains over the next six months.

The Institute for Supply Management's Manufacturing PMI increased by 0.9 percentage points in December, reaching 49.3%. Despite this rise, the reading signaled a contraction in the manufacturing sector for the ninth consecutive month and marked the 25th contraction in the past 26 months. While a PMI above 50.0% suggests expansion, readings below 50.0% indicate contraction—and a sustained level above 42.5% generally signals overall economic growth. Consequently, December's PMI marked 56 consecutive months of overall economic expansion following a contraction in April 2020.

The Federal Reserve reported that total industrial production increased by 0.9% in December after a 0.2% gain in November. The production index stood at 103.2% of its 2017 average—up 0.5% from the previous year. Manufacturing output rose 0.6% in December (with durable manufacturing up 0.4%, nondurable manufacturing up 0.7%, and other manufacturing—including publishing and logging—up 0.8%), although it remained unchanged compared to the previous year.

The Institute for Supply Management's Services PMI increased by 2.0 percentage points in December to 54.1%. This reading indicates that the services sector expanded for the sixth consecutive month—the 52nd expansion in 55 months—with a 12-month average of 52.5%. Three of the four subindexes (business activity, employment, and new orders) showed expansion. Generally, a Services PMI above 50% indicates growth, while below 50% signifies contraction; a sustained reading above 49.0% typically signals overall economic expansion.

Major U.S. equity indexes ended 4Q 2024 with mixed returns after positive gains in the last quarter. The Nasdaq Composite recorded a 6.2% price return in 4Q 2024 (after a 2.6% rise in 3Q 2024), culminating in a 28.6% annual return. Dominated by high-tech stocks, the index experienced market volatility in December comparable to November, with the Chicago Board Options Exchange Volatility Index (VIX) averaging 15.8—slightly lower than November's 16.1—and peaking at 27.6 versus 22.0 in November.

The Census Bureau reported that housing starts increased by 15.8% in December, reaching an annual rate of 1.499 million (up from 1.294 million in November). December's rate was 4.4% below December 2023's 1.568 million rate. In 2024, new privately owned housing starts totaled 1.364 million (compared to 1.420 million in 2023). Single-family housing starts rose 3.3% in December to an annual rate of 1.050 million (up from 1.016 million in November) but were 2.6% lower than a year earlier, with 4Q 2024 totals of 1.009 million versus 947,700 in 2023. Multifamily housing starts surged 58.9% in December to 418,000, though they were 11.3% lower year over year; totals for 2024 were 336,600 compared to 458,800 in 2023.

The number of building permit authorizations for privately owned housing units—a leading indicator of new home demand—fell 0.7% in December to an annual rate of 1.483 million, a 3.1% decrease from one year ago. In 2024, permits for new privately owned housing units in permit-issuing areas totaled 1.471 million, compared to 1.511 million in 2023.

The National Association of Realtors (NAR) reported that existing-home sales increased by 2.2% in December to a seasonally adjusted annual rate of 4.24 million, following an increase in November. This was the strongest reading since February 2024 (at 4.38 million). Over the past 12 months, existing-home sales (which account for the majority of all home sales) rose by 9.3%—the largest year-over-year gain since June 2021—although on an annual basis, sales (4.06 million) declined to their lowest level since 1995.

In December, builder confidence was unchanged at 46.0, according to the National Association of Home Builders (NAHB)/Wells Fargo Housing Market Index (HMI). Despite persistent concerns over high interest rates, elevated construction costs, and a shortage of buildable lots, builders are optimistic about future sales. This optimism is reflected in a nearly three-year high in future sales expectations. The report also forecasted that the Federal Reserve would reduce its rate cuts in 2025 from 100 basis points to 75 basis points due to ongoing inflation pressures, and it predicted that mortgage rates would remain above 6.0%.

ECONOMIC OUTLOOK

Consensus Economics Inc., the publisher of Consensus Forecasts—USA, reports that U.S. forecasters expect real GDP to rise at an annual rate of 1.8% in both the first and second quarters of 2025. Monthly surveys of prominent economic and financial forecasters indicate that GDP is projected to increase by 2.7% in 2024 and by 2.0% in 2025.

They forecast that consumer spending will grow at an annual rate of 1.9% in Q1 2025 and 2.0% in Q2 2025, with overall consumer spending increasing by 2.6% in 2024 and 2.3% in 2025.

Forecasters expect unemployment to average 4.3% in both the first and second quarters of 2025, compared to an average of 4.1% in 2024.

The most recent three-year outlook from the Urban Land Institute (ULI) and Ernst & Young (EY), published in October 2024, concluded that real estate economists' views on the U.S. economy have improved over the past six months since the previous Spring 2024 report. The forecast predicted that real GDP would grow by 2.5% in 2024, decline to 2.0% in 2025, and then remain stable in 2026. Employment growth was expected to reach 2.3 million in 2024 before decreasing to 1.6 million in 2025 and 1.5 million in 2026. The ULI/EY Real Estate Consensus Forecast—based on a survey of 36 leading real estate economists and analysts—provides three-year median forecasts for 33 economic and real estate indicators.

The key findings from the Real Estate Consensus Forecast include:

- U.S. commercial real estate transaction volumes are predicted to rise in 2024 to $400.0 billion (up from $380.0 billion in 2023), forecast to increase further to $500.0 billion in 2025 and to $600.0 billion in 2026.

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Industry Overview

Title: Software Publishing in the US

NAICS: 51121

Sector: Information

Date: 21 March 2025

Industry Definition

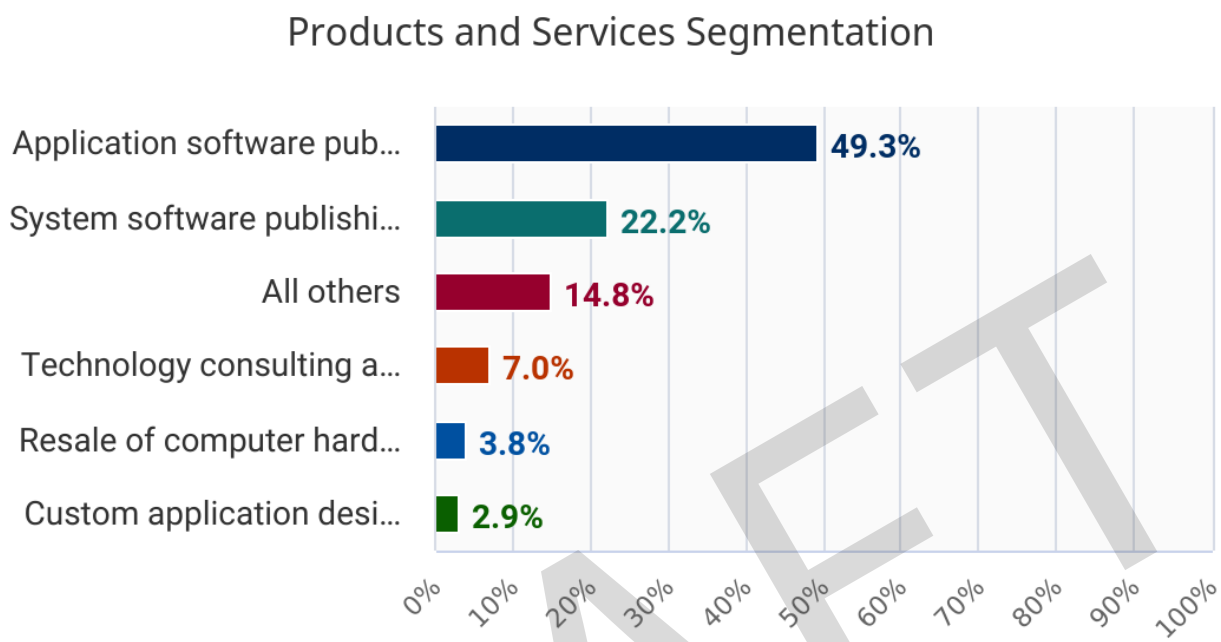
Software publishers disseminate licenses to customers for the right to execute software on their own computers. Operators in this industry market and distribute software products and may also design the software, produce support materials and provide support services.

Key Trends

- **Large software companies benefit from transforming global businesses around them**. Colleges and education systems will focus on the most established software, encouraging companies to leverage this talent and buy more subscriptions.
- **Software companies experience minimal external competition, as their software is uniquely useful.** Instead, development companies must handle low entry barriers and limit patent infringement.
- **Cloud computing is paving the way for consistent revenue through SaaS models.** These subscription services provide recurring income and allow clients to access and update software seamlessly without hefty IT infrastructure investments.
- **Enterprise demand drives industry revenue growth.** Businesses often prefer subscription-based or licensing pricing models, which offer providers sustained revenue streams.
- **Software creation has barriers to entry.** Small operators often seek a buyout from a major player rather than total market control, as the major players push aggressively against even modest competition.
- **Microsoft and Oracle lead in software publishing**. Their diverse product portfolios include essential enterprise solutions, cloud services and platforms that are adopted across the US economy.
- **Cybersecurity laws push firms to safeguard sensitive information**. With CISA and FTC mandates, companies are urged to share threat intel and implement measures to protect personal data from potential cyber threats.
- **Inflation's ripple effect is affecting software sales and budgets**. As essential goods become pricier, both individuals and businesses are reprioritizing expenditure, which can delay technology purchases and alter market trends.
- **Software's replicability reduces producers' purchase and depreciation costs.** As a result, business software producers have become some of the most profitable companies in the economy.
- **Wages are the primary expense of software development companies.** Hiring and retaining expert talent often costs more than $100,000 a year per employee in direct compensation alone.
- **Business software development companies are located near business centers**. However, the rise of remote work enables developers to move anywhere and lower their work costs.
- **Regions near high-education centers can dramatically lower their software hiring costs.** College work programs and alternative education verification are becoming more common as college prices have increased.
- **Application software addresses diverse user needs across various sectors**. By enhancing user experiences and offering solutions from productivity to entertainment, developers can target niche and mass markets, driving innovation and customization.
- **System software is the backbone of the technology sector.** Developers are drawn to it for its reliability in

the market and its central role in maintaining compatibility and performance across tech ecosystems.

Products & Services Segmentation

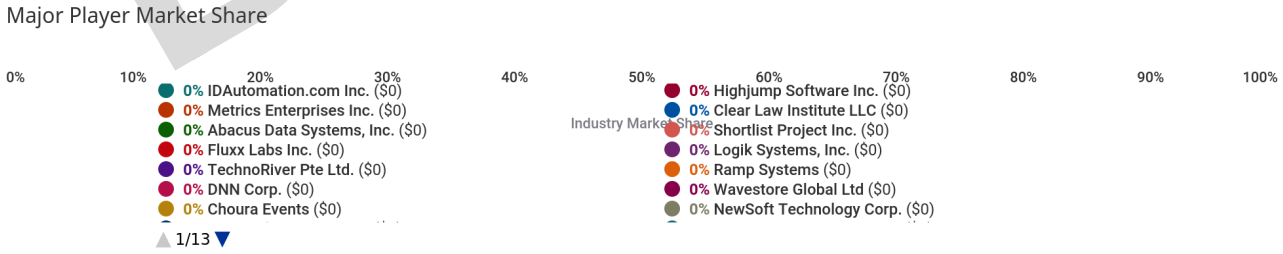


2023 INDUSTRY REVENUE

$528.5bn

Software Publishing
Source: IBISWorld

Major Players



2023 INDUSTRY REVENUE

$528.5bn

Software Publishing
Source: IBISWorld

SWOT

Strengths
- Growth Life Cycle Stage
- Low Volatility
- Low Imports
- High Profit vs. Sector Average

Weaknesses
- Low & Steady Barriers to Entry
- Low & Steady Level of Assistance
- High Competition
- High Customer Class Concentration
- High Product/Service Concentration
- Low Revenue per Employee
- High Capital Requirements

Opportunities
- High Revenue Growth (2005-2025)
- High Revenue Growth (2020-2025)
- High Revenue Growth (2025-2030)
- Percentage of business conducted online

Threats
- Low Outlier Growth
- Low Performance Drivers
- Corporate profit

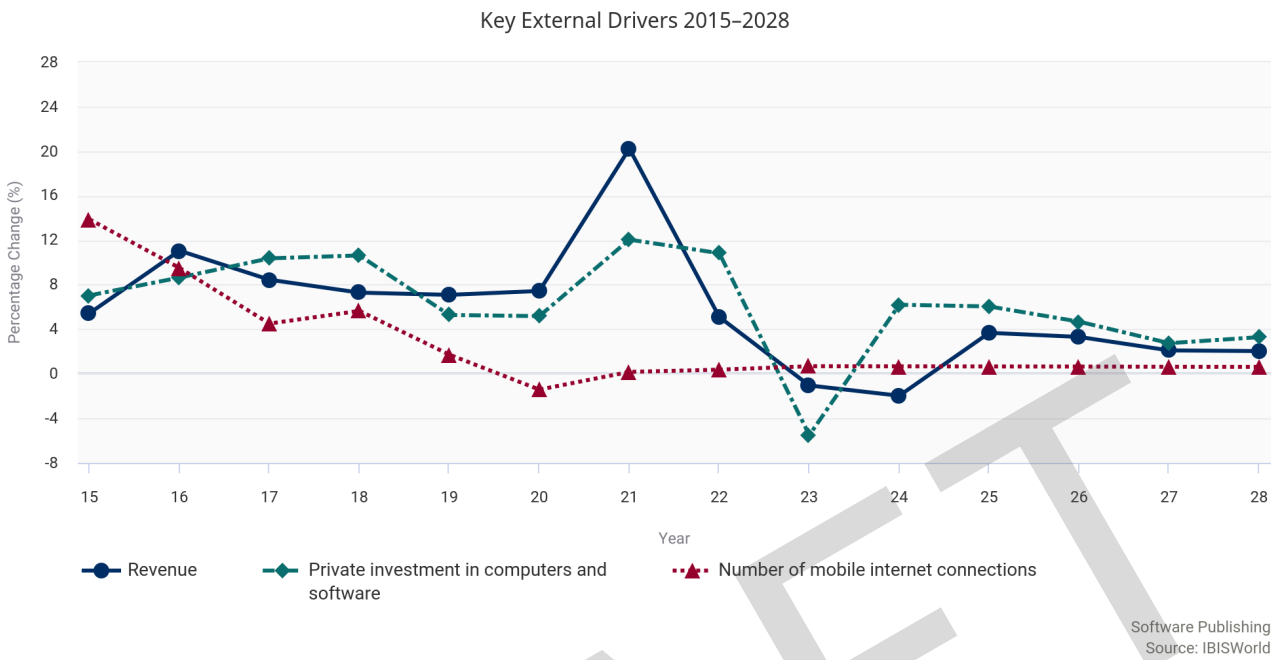
Executive Summary

Software publishing companies such as Microsoft and Oracle have become some of the world's most influential entities, primarily because of their omnipresence in the devices people use on an hourly basis. Over the past 20 years, industry revenue has more than tripled, untouched by the Great Recession and boosted by the pandemic. During the current period, the industry has continuously introduced new solutions and has enhanced existing products, leading to revenue climbing at a CAGR of 4.9% to $541.3 billion in 2025, with an increase of 2.9% in 2025 alone, while profit in the current year accounts for 28.3% of industry revenue.

The industry's current trajectory has benefited from new operating system technologies. Productivity software has transitioned to cloud-based models, allowing seamless access across devices in various markets. Subscription-based services drive revenue as they provide recurring income for many companies. However, as updates and repairs are deployed through the cloud, these services have stressed profit levels for many companies and support services have become more complex. Meanwhile, advancements in artificial intelligence are revolutionizing software usability and cost efficiency. As AI continues to be adopted, the acquisition activity within the industry remains high as leading tech firms eye opportunities to gain an edge in the highly competitive software market.

Moving forward, Cloud computing and SaaS models will continue to drive industry revenue. However, companies that expand their integration capabilities will become more competitive as clients increasingly demand more flexible solutions. Continued advancements in AI will significantly affect innovation within the industry, impacting both development approaches and user experiences. Meanwhile, as cyber threats evolve, industry publishers will invest heavily in new solutions to protect sensitive data and maintain their reputations as reliable providers. Though demand may not reach pandemic-era levels, industry revenue growth is still expected to expand at a CAGR of 2.7% to $618.8 in 2030.

Key External Drivers



Private investment in computers and software

Software is often purchased with hardware, aligning software licenses with computer installations. This creates a direct link between computer expenditures and software publishing revenue. Rising investments in these sectors indicate promising growth prospects for the software publishing industry. As organizations expand their technological infrastructure, the correlation suggests a fertile ground for software publishers to capitalize on increasing computer and software expenditures.

Number of mobile internet connections

As the number of mobile internet connections grows, interest in developing mobile software intensifies. Consumers and businesses demand mobile applications as extensions of existing programs and innovative designs. This trend provides support for demand conditions, where industry developers can create software that benefits from devices' always-on nature. This expansion reflects a shift in how digital solutions are integrated into everyday life, driving growth in the mobile software sector.

Corporate profit

When corporate profit rises, companies invest more in capital goods such as software and related equipment. Conversely, IT spending is often one of the first areas cut when profit declines. Decreases in corporate profit represent a threat to the industry, as companies may hesitate to invest heavily. This cyclical pattern underscores the vulnerability of IT spending to broader economic trends.

Percentage of business conducted online

The surge in online business activities directly boosts the software publishing industry, catalyzing demand for digital solutions and cloud-based platforms. This shift accelerates innovation and profitability as companies seek efficient online tools. As more businesses embrace digital operations, software publishers experience heightened performance through increased sales and adaptability. With companies continuing to embrace digital platforms, the percentage of business conducted online is on an upward trend, representing a long-term opportunity for growth within the industry.

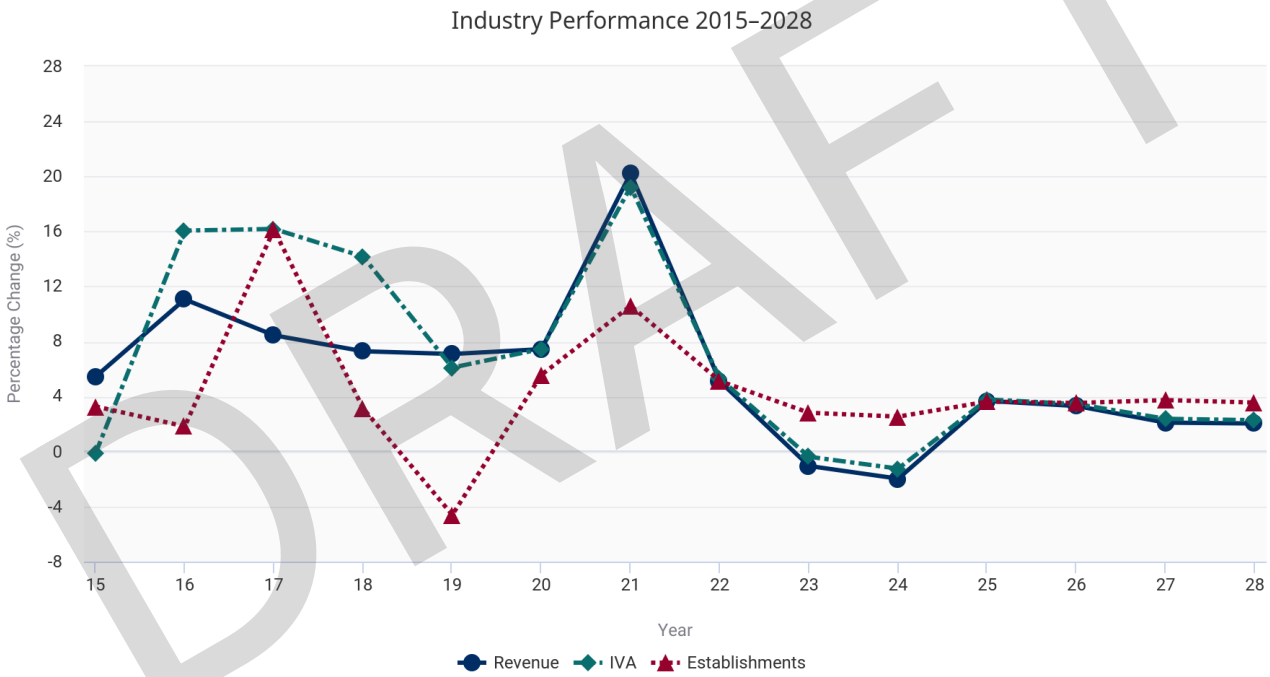
Consumer spending

Consumer spending directly influences the software publishing industry by driving demand for new and innovative products. As consumers allocate more resources toward software purchases, publishers experience increased sales and recurring revenue for growth. Conversely, reduced spending can hinder development and profitability. This cyclic relationship represents how economic confidence is pivotal in shaping industry dynamics, highlighting consumer power in digital evolution.

Percentage of households with at least one computer

A higher percentage of households with computers boosts the software publishing industry, expanding the customer base for software products. This accessibility increases demand for applications, promoting industry innovation and revenue growth. Consequently, software companies are incentivized to develop diverse and user-friendly solutions, further enhancing their market position and profitability.

Current Performance Analysis



Software Publishing
Source: IBISWorld

Enterprise demand has continued to drive growth

- Business demand for productivity and application-based software has remained the primary catalyst for industry revenue growth. As productivity suites, such as Microsoft 365 and Google Workspace, continue to provide a baseline of recurring revenue for the industry, recent growth has been shaped by the growing number of enterprises demanding complementary software solutions for their specific business needs. According to CloudEagle, as of 2023, companies with 10–100 employees spend between $250,000 to $1.0 million on software, while larger companies with up to 5,000 employees spend $40 million to $100 million. With software expenses ranking as the third largest expense for many organizations, publishers continue to benefit from favorable demand conditions within the enterprise market as businesses continue to demand solutions that meet their unique needs.

- With remote work and hybrid models being solidified as permanent trends within the economy, collaboration application sales have surged. Microsoft Teams, Slack and Asana lead the development of solutions that enhance project management and team collaboration across a wide range of industries. To maximize sales potential, leading communication software publishers have prioritized compatibility with existing productivity suites. For example, both Asana and Slack provide integrations and synching within Outlook and Teams, components of Microsoft 365, allowing users to convert emails into tasks or messages that can be shared within their respective platforms.
- Beyond communication software, a surge in data-driven decision-making has fueled demand for business intelligence and analytics software. Solutions like Tableau and Power BI allow organizations to harness big data, provide actionable insights and develop informed business strategies. These applications are crucial in a competitive market. Meanwhile, cloud computing applications, such as Amazon Web Services (AWS) and Microsoft Azure, have generated significant revenue spikes because of their ability to cater to diverse industry needs. Cloud platforms enable businesses to rapidly adapt and innovate while reducing IT costs, making them indispensable for sectors like healthcare and finance that require secure and scalable infrastructure.
- In the CRM space, Salesforce has emerged, generating significant revenue by offering comprehensive tools that help businesses in retail and hospitality enhance customer relations and streamline operations. Doubling its total revenue from $17.1 billion in 2020 to $34.9 billion in 2024, the company's unique ability to harness customer data for personalized marketing and service strategies has driven sales within the industry.

SaaS models sustain revenue but also present unique challenges

- The Software as a Service (SaaS) model has continued to support revenue streams for software publishers, as subscription-based frameworks have led to significantly more growth than traditional licensing and one-time purchase models. Publishers benefit from more predictable and recurring revenue flows, allowing them to focus on customer retention and long-term relationships rather than solely on acquiring new customers.
- Over the past five years, SaaS has encouraged innovation by enabling software publishers to gather real-time user feedback, deploy updates and incorporate new features that align with user needs. Through the cloud, publishers have been increasingly able to provide maintenance and support services to clients without the assistance of on-site IT professionals. Though these services have contributed to sales growth, EY notes that they have also resulted in a more complex cost structure for many companies. Since publishers have played a greater role in application support, many companies have reported higher R&D costs, which has been a main driver in the industry's 'other' costs increasing from 18.7% in 2020 to 23.9% in 2025. As of 2023, costs of goods sold (COGS) for an average SaaS publisher now range from 15% to 25%, according to EY. This has ultimately affected profitability across the industry as many companies tweak their resource allocation approaches to account for these costs.
- To effectively manage their costs in the face of increasing expenses tied to the SaaS model, publishers are employing a range of strategies tailored to their specific contexts. For example, retail SaaS providers like Shopify have addressed cost management by implementing advanced analytics to anticipate resource needs. By predicting peak times and resource utilization patterns, Shopify can optimize its infrastructure capacity, ensuring it only expends resources that directly impact customer experience and revenue generation. Their platform's modular design also allows targeted investments in features that drive customer engagement and sales conversion.
- Meanwhile, in the financial sector, companies like Intuit, which offers TurboTax and QuickBooks, manage their costs by utilizing cloud elasticity. This allows them to scale their computing resources in response to tax season peaks, minimizing idle resource costs during

off-peak periods. They also invest in automation to reduce transactional and administrative overhead, ensuring their workforce focuses on high-value R&D and support activities that enhance customer service and product innovation.

Artificial Intelligence (AI) and machine learning (ML) tools play an important role in the industry

- AI and automation have emerged as crucial tools that have shaped software development and customer experiences. On the development side, AI has significantly boosted efficiency and creativity, leading to reduced costs associated with software development lifecycles (SDLC). According to a report published by IBM, tools such as GitHub Copilot and IBM Watson Code Assistant have provided AI-driven code generation services for many software companies, allowing them to automate routine tasks. Meanwhile, AI has also played a crucial role in analyzing code patterns, predicting potential bugs and offering solutions that mitigate risks early in the development life cycle. With AI also assisting in planning, maintenance and documentation, it has ultimately reduced costs for publishers, supporting profitability.
- Despite productivity gains associated with AI, skilled engineers are still needed within the industry. Over the past five years, industry employment has grown at a CAGR of 6.4%, while wage costs remain high, accounting for 39.4% of industry expenses in 2025. Rather than replacing developers, AI has instead driven a shift in focus and companies now demand system optimizers skilled in machine learning and data science. According to Indeed, roles that have surged in popularity include data scientist and machine learning engineer positions.
- AI has also been seamlessly integrated into existing software sold to all markets, enhancing capabilities and propelling industries into newfound efficiencies. In customer relationship management (CRM), for example, AI features within platforms like Salesforce Einstein augment data analysis, enabling predictive insights and automation in customer interactions, ultimately streamlining sales and marketing efforts. In human resources (HR), AI has been incorporated into Workday and SAP SuccessFactors, which has boosted talent management and recruitment processes through features like AI-driven candidate screening and performance analytics.
- Simultaneously, AI has been the genesis of entirely new software solutions, driving transformation across sectors. In the finance industry, platforms such as AlphaSense leverage AI to analyze market data and provide actionable insights, a functionality previously unattainable with traditional software. Meanwhile, in healthcare, AI-driven software like Aidoc focuses on medical imaging, providing radiologists with novel diagnostic insights powered by deep learning algorithms, thereby improving diagnostic accuracy and speed.

Acquisition activity has surged during the current period

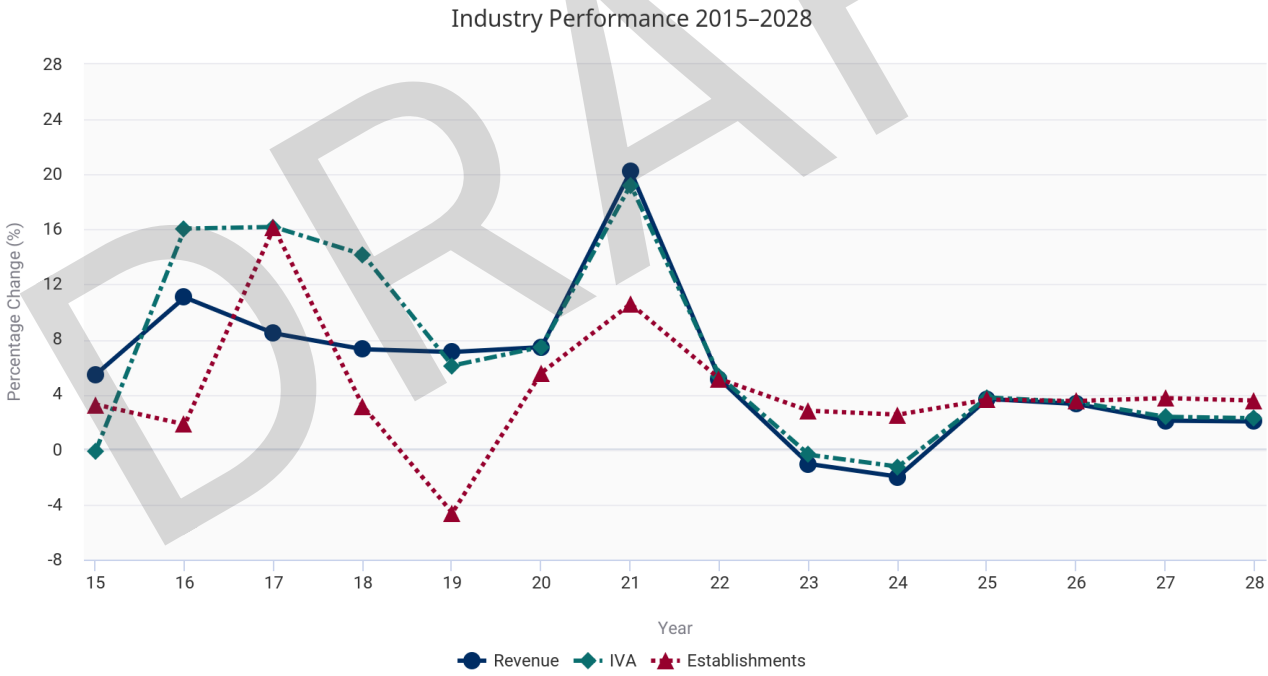
- Publishers remain pressured to stay competitive and meet increasing digital demands, which often leads to acquisition activity. With motivations ranging from acquiring emerging technologies to adding valuable and popular intellectual property (IP) to offerings, leading publishers continue to push for differentiation in an increasingly competitive market.
- As technologies like AI, cloud computing and cybersecurity rapidly emerge in the marketplace, publishers confront high costs when developing in-house products leveraging these innovations. For many publishers with significant cashflow, acquiring specialized companies is more cost-effective than building new competencies internally. For example, in 2022, Microsoft acquired AI startup Nuance Communications for $19.7 billion to augment its healthcare sector offerings. Such acquisitions allow companies to foster innovation and create unique user experiences by integrating exclusive content and technologies into their existing ecosystems. They also provide a hedge against licensing costs and create opportunities for cross-platform innovation.
- Outside of emerging technologies, deals involving the acquisition of established IP, including exclusive software and patents, have also shaped the industry landscape in household and

business markets. Over the past five years, publishers have remained motivated to bolster product portfolios and capture greater market shares within each market segment. Microsoft's 2023 acquisition of Activision Blizzard for approximately $68.7 billion is a prime example of how IP acquisitions can significantly shift market shares in multiple ways. Representing one of the largest acquisitions in tech history, this transaction will inevitably boost the company's position in the household market. However, future financial gains and increased market share from the gaming division also have the potential to free up capital and resources that Microsoft could reinvest into its legacy offerings, such as its Windows operating system, Office productivity suite and Azure cloud services. Salesforce's acquisition of Slack, valued at approximately $27.7 billion, was motivated by similar desires, as the company was able to position itself as a more comprehensive enterprise software provider while expanding its CRM services.

Cloud computing is paving the way for consistent revenue through SaaS models. These subscription services provide recurring income and allow clients to access and update software seamlessly without hefty IT infrastructure investments.

Enterprise demand drives industry revenue growth. Businesses often prefer subscription-based or licensing pricing models, which offer providers sustained revenue streams.

Outlook Analysis



Software Publishing
Source: IBISWorld

Cybersecurity will come into greater focus

- As cyber threats become increasingly prevalent, cybersecurity will evolve from a secondary feature to a key competitive edge for publishers. Shaping the future of the industry, significant investments have been made internally and within software product offerings to ensure data security moving forward. This has and will continue to result in cybersecurity software applications, such as CrowdStrike and Fortinet, generating significant sales growth

moving forward. At the same time, technology and consulting software will also generate increased interest as companies seek to understand cybersecurity risks.

- After previously pledging to invest $1.0 billion each year in cybersecurity in 2017 and launching its Secure Future Initiative in 2023, Microsoft's CEO, Satya Nadella, revealed in a Q3 2024 earnings call that the company is 'doubling down' on cybersecurity moving forward, affecting future investments made by the company during the outlook period. This announcement has come following a state-linked 2023 attack on Microsoft Exchange Online, which leaked thousands of US State Department emails and affected the company's reputation within the government market segment. After the Cyber Safety Review Board found that Microsoft had previously prioritized speed to market over product security, Nadella shifted Microsoft's priorities, emphasizing that cybersecurity protection investments would come before any other investments made by the company in the coming years. This announcement has set the tone throughout the tech and software space, highlighting growing concerns related to cyber threats.
- For future software development, cybersecurity will become an integral component, fundamentally reshaping the development paradigm. According to Forbes, the adoption of secure-by-design principles within the DevSecOps framework will ensure that security is embedded at every stage of the software development lifecycle rather than being added as an afterthought. Leveraging machine learning, automated security testing will ultimately become a staple throughout the industry. This will have a profound impact on future earnings for leading software publishers, who incur significant financial and reputation losses associated with cyber breaches.
- In the longer term, software developers will also adopt emerging quantum computing technology, which represents an opportunity and a threat to cybersecurity. As traditional encryption methods, such as RSA and ECC, are threatened by quantum threats, publishers will need to adopt quantum encryption solutions, such as quantum key distribution (QKD), to protect sensitive data and improve resilience against breaches.

Publishers that prioritize integration capabilities will become more competitive

- As business needs evolve, publishers will increasingly invest in interoperability to remain competitive and retain clients. According to HubSpot, there are scenarios where it's seven times more expensive for publishers to acquire a new customer than to retain an existing one. To maximize cash flows, publishers must ensure that their software is compatible with various systems in the future.
- Interoperability presents technical challenges for publishers, as it often requires them to manage varying application programming interfaces (APIs) and protocols to ensure that a product contains an adequate communication foundation. Integration initiatives also have the potential to face testing and standardization issues, while connecting with external systems can also lead to security risks.
- Despite the inevitable hurdles that interoperability efforts face, publishers will largely benefit from these initiatives as they will inevitably expand market reach and open up opportunities for joint ventures, product bundles and integrated solutions within the industry.
- At the end of 2024, Oracle Health positioned itself as a leader in advancing interoperability by seeking to become a Qualified Health Information Network (QHIN) under TEFCA. This initiative is set to boost data sharing across diverse systems, putting Oracle on par with Epic Systems in building a robust national health information exchange over the coming years. By embedding cloud-native capabilities and artificial intelligence into its EHR solutions, Oracle aims to modernize healthcare's digital landscape and ease workflow challenges. These efforts have the potential to expand the company's market share in software and healthcare sectors moving forward. Oracle's redesign of its EHR, featuring generative AI for clinical insights, highlights its commitment to accessible patient data, potentially transforming healthcare delivery.

The industry will be highly reactive to advancements in artificial intelligence and machine learning

- With AI and Machine Learning (ML) already being essential inputs for many software platforms, publishers will increasingly invest in these tools and explore new ways to incorporate them into their development operations and offerings. Over the next five years, AI tools such as GitHub Copilot, PyTorch and TensorFlow will continue to be relied on for testing, debugging, writing code and optimizing algorithms. However, as AI models are refined and new capabilities are introduced, software publishers will look to quickly adopt the latest tools to remain competitive.
- Investment in AI infrastructure, particularly in building advanced data centers, will significantly bolster the capabilities of AI, which ultimately will drive the future growth of software publishing sales. These state-of-the-art facilities enable the processing and storage of vast datasets, essential for training complex machine learning models. As data centers become more sophisticated, they will provide the computational power necessary to support high-demand applications, allowing software publishers to develop more intelligent, responsive and personalized solutions moving forward.
- Up $230.0 billion from 2024, Meta, Amazon, Alphabet and Microsoft have deployed a combined $320 billion on AI technologies and data centers during 2025, according to CNBC. Meanwhile, OpenAI, Oracle, Microsoft and Nvidia have invested a combined $500.0 billion through a joint venture titled 'The Stargate Project.' Supported by the Trump administration, the project aims to construct 20 data centers throughout the US, which will inevitably boost capacity and maximize the innovation potential for software publishers.

Demand from the government market is set to grow

- Over the next five years, the US government market segment is poised for significant growth, driven by escalating national security concerns that necessitate the development and deployment of advanced software solutions. In recent years, the rise of state-sponsored artificial intelligence and machine learning-powered cyberattacks has intensified the challenge for government agencies. As cyber threats become more sophisticated and pervasive, the need for more effective cybersecurity measures will become a top priority for future administrations.
- Software publishers like Microsoft and Northrop Grumman are already engaged in long-term contracts with government agencies. However, there are still gaps in government security. For example, effective communication and data sharing between agencies, such as the Department of Defense (DoD), Department of Homeland Security (DHS) and the intelligence community, remain fragmented. According to the US Government Accountability Office (GAO), the lack of a unified information-sharing platform has delayed threat detection and response, as seen in the aftermath of attacks against critical infrastructure where multiple agencies struggled to quickly reconcile threat intelligence.
- Many departments also continue to use outdated legacy systems. As of 2025, the Social Security Administration (SSA) still relies on COBOL-based systems originally developed in the 1960s. These systems handle essential tasks like processing benefits, and a lack of programmers familiar with the system has complicated maintenance and updates. Meanwhile, the Internal Revenue Service (IRS) uses the Individual Master File (IMF) and Business Master File (BMF) systems that are also built on legacy COBOL. Despite being outdated, this infrastructure is critical for tax processing and data management, yet modernization efforts have been slow, potentially impacting data security and processing efficiency.
- Security and efficiency gaps present significant opportunities for software developers to partner with government agencies moving forward. For critical national security concerns, the government is likely to continue adopting advanced cybersecurity solutions using AI-driven threat detection and response mechanisms. New software publishing contracts with leaders such as CrowdStrike will strengthen communication and collaboration, bolstering national

security. Meanwhile, in 2025, the Department of Government Efficiency (DOGE) has highlighted many software inefficiencies associated with SSA and additional government agencies, indicating that the government intends to modernize COBOL systems moving forward. Investment in these areas could boost sales of software companies that offer scalable cloud-based architectures and microservices.

Cybersecurity will come into greater focus

Publishers that prioritize integration capabilities will become more competitive

The industry will be highly reactive to advancements in artificial intelligence and machine learning

Comparable Company Descriptions

AREN

The Arena Group Holdings, Inc. is a data-driven media company that focuses on building deep content verticals powered by a digital media platform (the Platform), empowering premium publishers who impact, inform, educate, and entertain. It focuses on leveraging the Platform and iconic brands in targeted verticals to maximize the audience, improve engagement, and optimize monetization of digital publishing assets for the benefit of its users, advertiser clients, and its owned and operated properties as well as properties the firm runs on behalf of its independent publisher partners. The company operates the media businesses for Sports Illustrated, TheStreet, Inc., and College Spun Media Incorporated. It also powers independent publisher partners, including Biography, History, and FanNation. The company was founded by James C. Heckman Jr. on October 1, 1990 and is headquartered in New York, NY.

BZFD

BuzzFeed, Inc. operates as a social news and entertainment company. It offers an online service that keeps track in real-time and highlights new content. The firm provides information in the categories of culture, movies, music, television, celebrity, style, food, politics, business, sports, and science and technology. The company was founded by Jonah H. Peretti and John S. Johnson III in 2006 and is headquartered in New York, NY.

FUTR-GB

Future Plc engages in the publishing of special-interest consumer magazines and websites and the operation of events in the areas of technology, games and entertainment, music, knowledge, creative and photography, field sports, and home interest. The firm operates through the U.K. and U.S. segments. Its brand portfolio includes techradar, T3, Gizmodo UK, Lifehacker UK, MacFormat, Mac Life, Maximum PC, GamesRadar+, PC Gamer, Kotaku UK, Edge, Total Film, SFX, Guitarist, Total Guitar, Guitar Techniques, Rhythm, Computer Music, Digital Camera, N Photo, Photo Plus, Professional Photographer, Photography Week, Creative Bloq, Net, Computer Arts, ImagineFX, and Generate. The company was founded by Chris Anderson in 1985 and is headquartered in Bath, the United Kingdom.

GCI

Gannett Co., Inc. engages in the provision of digital media and marketing solutions. It operates through the following segments: Domestic Gannett Media, Newsquest, and Digital Marketing Solutions. The Domestic Gannett Media segment consists of USA TODAY and daily and weekly content brands in approximately 220 local U.S. markets across 43 states. The Newsquest segment includes 210 digital news and media brands across portfolio, including over 150 daily and weekly newspapers and over 60 magazines. The Digital Marketing Solutions segment operates under the brand LocaliQ, providing digital advertising and marketing products and solutions to help local businesses succeed. The company was founded in 1906 and is headquartered in Pittsford, NY.

ZD

Ziff Davis, Inc. is a digital media and internet company. Its portfolio includes brands in technology, shopping, gaming and entertainment, connectivity, health, cybersecurity, and Martech. It operates through the following segments: Technology and Shopping, Gaming and Entertainment, Health and Wellness, Connectivity, and Cybersecurity and Martech. The company was founded by Jaye Muller and John F. Rieley in 1995 and is headquartered in New York, NY.

Option Pricing Model

Black-Scholes Call Option Formula

$$Se^{-qT} \times N(d_1) - Xe^{-rT} \times N(d_2)$$

where

$$d_1 = \frac{\ln(\frac{s}{x}) + T(r - q + \frac{\sigma^2}{2})}{\sigma\sqrt{T}} \qquad d_2 = d_1 - \sigma\sqrt{T}$$

Inputs:

S = Current price of the security

X = Exercise (strike) price

N(·) = Cumulative probability function for a standardized normal distribution

ln(·) = Natural logarithm function

e = The base of the natural logarithm

T = Time to expiration (in years)

r = Risk-free interest rate

q = Dividend yield (if any)

σ = Annualized volatility of the security price

Put Option Models

Chaffe Put Option Formula

$$\frac{Xe^{-rT} \times N(-d_2) - Se^{-qT} \times N(-d_1) - S + Xe^{-rT}}{S}$$

where

$$d_1 = \frac{\ln(\frac{s}{x}) + T(r - q + \frac{\sigma^2}{2})}{\sigma\sqrt{T}} \qquad d_2 = d_1 - \sigma\sqrt{T}$$

Inputs:

S = Current price of the security

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Ghaidarov Average-Strike Asian Put Option Formula

$$V_o e^{-qT}[2N(\frac{V_r}{2}) - 1]$$

where

$$V_r = \sqrt{\ln[2(e^{T\sigma^2} - \sigma^{2T} - 1)] - 2\ln(\sigma^2 T)}$$

Inputs:

N(·) = Cumulative probability function for a normal distribution

ln(·) = The natural log function

e = a Mathematical constant; the base of the natural logarithm

q = Annualized dividend yield of security

r = Risk-free interest rate

T = Time to expiration of put option (in years)—i.e., holding period

σ = Annualized volatility of the underlying security

Vo = Value of the otherwise identical unrestricted interest

Finnerty Put Option Formula

$$V_o e^{-qT}[N(\frac{v\sqrt{T}}{2}) - N(-\frac{v\sqrt{T}}{2})]$$

where

$$v\sqrt{T} = \sqrt{\sigma^2 T + \ln[2(e^{T\sigma^2} - \sigma^2 T - 1)] - 2\ln(e^{T\sigma^2} - 1)}$$

Inputs:

N(·) = Cumulative probability function for a normal distribution

ln(·) = The natural log function

e = A mathematical constant; the base of the natural logarithm

q = Annualized dividend yield of security

r = Risk-free interest rate

T = Time to expiration of put option (in years)—i.e., holding period

σ = Annualized volatility of the underlying security

Vo = Value of the otherwise identical unrestricted interest

Stage of Development

The AICPA Valuation Guide describes six stages of enterprise development:

STAGE ONE

Enterprise has no product revenue to date and limited expense history, and typically an incomplete management team with an idea, plan, and possibly some initial product development. Typically, seed capital or first-round financing is provided during this stage by friends and family, angels, or venture capital firms focusing on early-stage enterprises, and the securities issued to those investors are occasionally in the form of common stock but are more commonly in the form of preferred stock.

STAGE TWO

Enterprise has no product revenue but substantive expense history, as product development is underway and business challenges are thought to be understood. Typically, a second or third round of financing occurs during this stage. Typical investors are venture capital firms, which may provide additional management or board of directors expertise. The typical securities issued to those investors are in the form of preferred stock.

STAGE THREE

Enterprise has made significant progress in product development; key development milestones have been met (for example, hiring of a management team); and development is near completion (for example, alpha and beta testing), but generally there is no product revenue. Typically, later rounds of financing occur during this stage. Typical investors are venture capital firms and strategic business partners. The typical securities issued to those investors are in the form of preferred stock.

STAGE FOUR

Enterprise has met additional key development milestones (for example, first customer orders, first revenue shipments) and has some product revenue, but is still operating at a loss. Typically, mezzanine rounds of financing occur during this stage. Also, it is frequently in this stage that discussions would start with investment banks for an IPO.

STAGE FIVE

Enterprise has product revenue and has recently achieved breakthrough measures of financial success such as operating profitability or breakeven or positive cash flows. A liquidity event of some sort, such as an IPO or a sale

of the enterprise, could occur in this stage. The form of securities issued is typically all common stock, with any outstanding preferred converting to common upon an IPO (and perhaps also upon other liquidity events).

STAGE SIX

Enterprise has an established financial history of profitable operations or generation of positive cash flows. An IPO or sale of the enterprise could also occur during this stage.

Venture Capital Required Rate of Return

The venture capital arena provides an observable estimate for the cost of capital in private companies due to the fact that private companies seek financing from venture capital firms. The following table illustrates the rates of return expected by venture capital investors at various stages of a private company's development as defined by various publications.

Stage of Development	Plummer[13]	Scherlis and Sahlman[14]	Sahlman and Others[15]
Start Up[16]	50%-70%	50%-70%	50%-100%
First stage or early development[17]	40%-60%	40%-60%	40%-60%
Second stage or expansion[18]	35%-50%	30%-50%	30%-40%
Bridge / IPO[19]	25%-35%	20%-35%	20%-30%

13. James L. Plummer, QED Report on Venture Capital Financial Analysis (Palo Alto: QED Reasearch, Inc., 1987).
14. Daniel R. Scherlis and William A. Sahlman, A Method for Valying High-Risk, Long Term, Investments: The 'Venture Capital Method' Harvard Business School Teaching Note 9-288-006 (Boston: Harvard Business School Publishing, 1989).
15. William A. Sahlman and others, Financial Entrepreneurial Ventures, Business Fundamentals (Boston: Harvard Business School Publishing, 1998).
16. As described in the publications referenced in this table, start-up-stage investments typically are made in enterprises that are less than one year old. The venture funding is to be used substantially for product development, prototype testing, and test marketing.
17. As described in the publications referenced in this table, early development-stage investments are made in enterprises that have developed prototypes that appear viable and for which further technical risk is deemed minimal, although commercial risk may be significant.
18. As described in the publications referenced in this table, enterprises in the expansion stage usually have shipped some product to consumers (including beta version).
19. As described in the publications referenced in this table, bridge/IPO-stage financing covers activities such as pilot plant construction, production design, and production testing, as well as bridge financing in anticipation of a later IPO.