

Vertical Software Public Market Analysis

March 2024

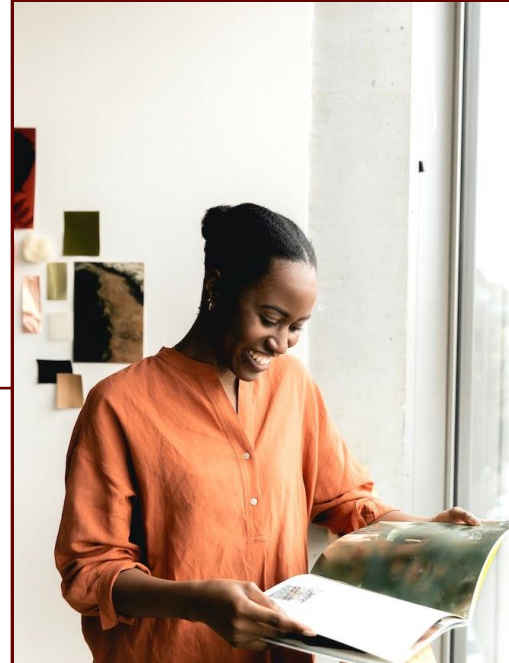


Harlem Capital



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Executive Summary



Vertical Software as a Service

- Vertical Software as a Service (SaaS) describes software companies that serve one specific industry vertical (e.g. Toast for Restaurants)
- Vertical SaaS has become one of Harlem Capital's core investment focuses over the past several years as it has shown to be resilient against recent market drawbacks
- Vertical Software boasts distinct advantages over its horizontal counterparts including:
 1. Customization & Industry Focus
 2. Easier Go-To-Market Motion
 3. Lower Customer Acquisition Cost
 4. Network Effects ⇒ Sales Expansion ⇒ Retention

Analysis Scope

Scope Overview:

1. Analyze publicly listed vertical software companies serving specific industries.
2. Identify key qualities and metrics influencing public valuations.
3. Determine performance signals indicative of strong company performance.
4. Establish benchmarks based on past trajectories for IPO-bound private companies.
5. Deliver actionable insights for early-stage vertical software companies.





Vertical Software Companies



Vertical Software Companies

20
Public Companies

\$343B
Market Cap

\$2.86B
Average Exit Value

\$19.44B
Venture Capital Funding



blackbaud®

Guidewire®



blend

aspentech

veeva



vacasa

tyler
technologies



AUTODESK®

lightspeed

appfolio



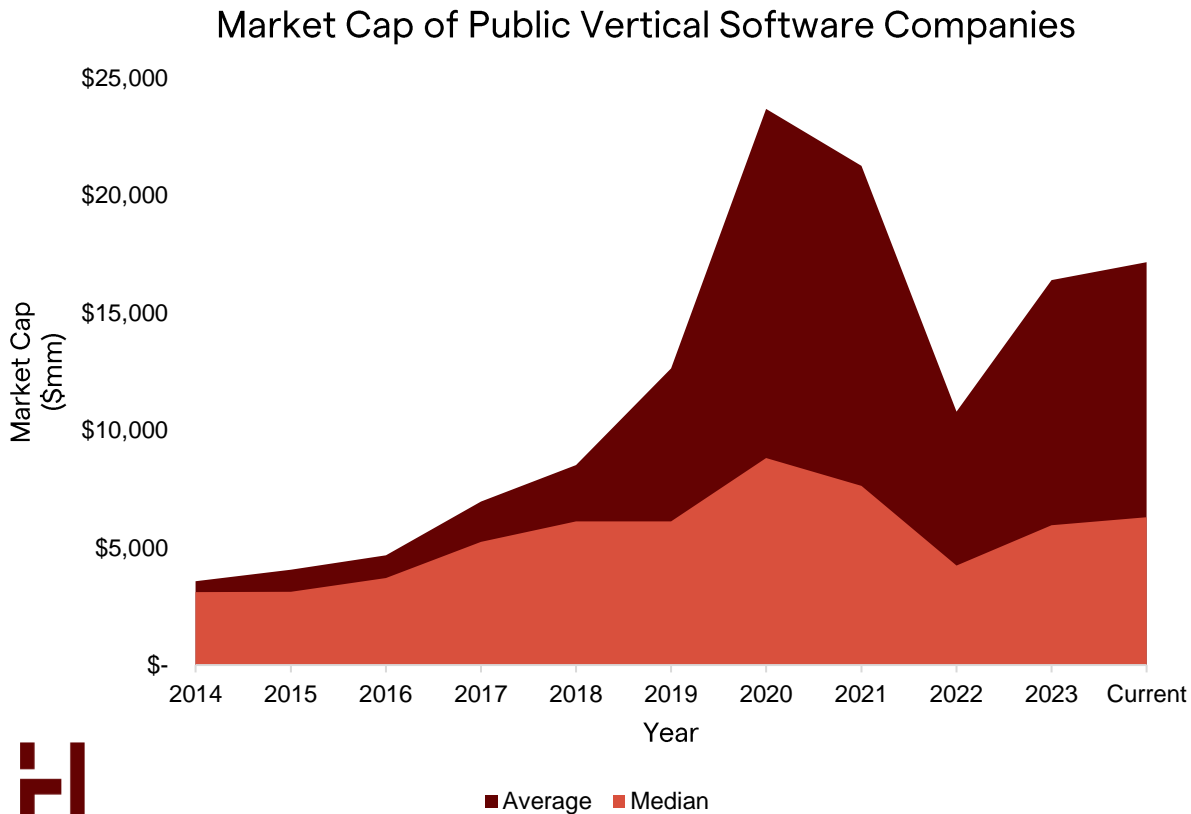
toast

PROCORE®



Historical Market Cap

In 2020, the market witnessed historically high averages for market capitalization, primarily propelled by the near doubling of market capitalization achieved by Shopify and Veeva Systems. Despite significant markdowns in valuation observed in 2022, vertical software companies are now demonstrating signs of economic recovery.



Company	EV/Revenue Multiple	% of Max EV/Revenue*	Market Cap (millions)	% of Max*
Veeva Systems	14.06x	46%	\$36,680	89%
Shopify	13.28x	29%	\$97,110	57%
Appfolio	12.73x	65%	\$8,170	100%
Aspen Technology	11.98x	100%	\$13,090	93%
Procure	11.49x	59%	\$11,422	100%
Autodesk	10.30x	61%	\$53,880	80%
Guidewire Software	9.94x	81%	\$9,640	89%
Tyler Technologies	9.55x	61%	\$17,780	81%
Ncino	7.35x	24%	\$3,320	50%
Constellation Software	7.33x	94%	\$59,640	100%
Instructure	6.19x	67%	\$3,080	79%
Five9	4.98x	19%	\$4,250	37%
BLEND	4.46x	76%	\$769	46%
Blackbaud	3.68x	67%	\$4,430	95%
Toast	3.26x	34%	\$13,440	77%
Envestnet	3.15x	64%	\$2,970	67%
Lightspeed POS	1.59x	5%	\$2,790	34%
Health Catalyst	1.47x	16%	\$511	25%
2U	1.01x	9%	\$35	1%
Vacasa	-0.04x	-3%	\$154	9%
Average	6.88x	52%	\$17,158	72%
Median	6.76x	72%	\$6,300	71%

*Percent represents current value as a percentage of maximum value in past 10 years



2023 Revenue Breakdown

The median revenue for vertical software public companies was \$6.2B in 2023. While 71% of this total revenue came from recurring sources, companies with both nonrecurring and recurring revenue streams tend to have higher enterprise value.

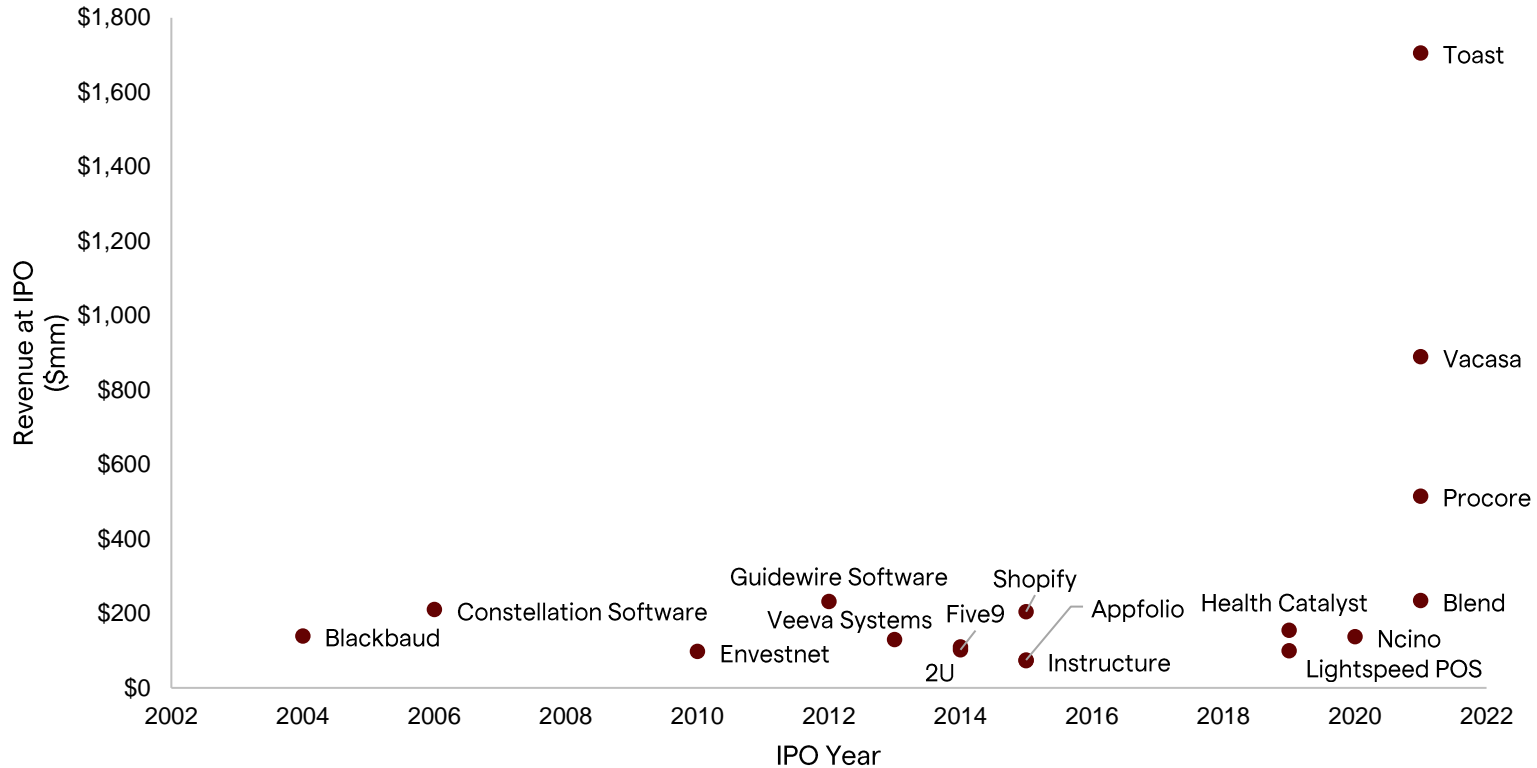
Company	Enterprise Value (millions)	2023 Revenue (millions)	Recurring Revenue % of Total Revenue	Recurring Revenue Source	Non-Recurring Revenue Source	Non-Recurring Revenue (millions)	ARR (millions)	Vertical
Autodesk	\$55,930	\$5,005	99%	Maintenance Plans, Subscription Plans, Other Revenue	Third Party Products	\$0	\$4,940	Construction
Instructure	\$3,060	\$530	100%	Enterprise Software		-	\$530	Education
Appfolio	\$8,000	\$620	25%	Core Solution	Value Added Services	\$464	\$157	General Verticals
Envestnet	\$3,940	\$1,050	100%	Enterprise Software		\$0	\$1,050	Asset Management
Lightspeed POS	\$2,780	\$731	40%	Subscription Services	Transaction-Based, Hardware	\$422	\$292	Ecommerce
Five9	\$4,400	\$910	100%	Cloud Software	N/A	-	\$910	Call Centers
2U	\$40	\$926	100%	Degree Program, Alternative Credential		-	\$926	Higher Education
Veeva Systems	\$36,770	\$2,360	73%	Subscription Services	Professional Services	\$422	\$1,733	Pharmaceutical Industry
Ncino	\$3,290	\$408	84%	Subscription Services	Professional Services	\$64	\$345	Commercial Banking
Blackbaud	\$3,940	\$946	100%	Enterprise Software		-	\$946	Nonprofit
Health Catalyst	\$495	\$296	63%	Enterprise Software	Professional Services	\$105	\$188	Healthcare
Shopify	\$92,640	\$7,220	74%	Subscription Services	Merchant Solutions	\$1,870	\$5,320	Ecommerce
Constellation Software	\$61,856	\$7,930	59%	Maintenance, Subscription	Professional Services, Hardware	\$1,934	\$4,688	General Verticals
Guidewire Software	\$9,420	\$905	39%	Subscription Services	Licenses, Services, Support	\$553	\$352	Insurance
Blend	\$637	\$157	100%	Enterprise Software		-	\$157	Mortgage Industry
Procore	\$10,830	\$950	100%	Enterprise Software		-	\$950	Construction
Vacasa	\$156	\$1,160	100%	Vacation Rental Platform, Other		-	\$1,160	Real Estate
Toast	\$12,350	\$3,870	13%	Subscription Services	Fintech, Hardware, Professional Services	\$3,365	\$500	Restaurants
Tyler Technologies	\$18,130	\$1,950	70%	Enterprise Software	Platform Technologies	\$595	\$1,370	Government
Aspen Technology	\$12,950	\$1,040	100%	Enterprise Software		-	\$1,040	Process Manufacturing
Average	\$17,081	\$1,948	77%			\$490	\$1,378	
Median	\$6,200	\$948	92%			\$32	\$936	



Revenue at IPO

The median revenue for vertical software public companies at IPO is \$138.7M. 2021 saw the highest revenue figures at IPO led by Toast at \$1.7B in revenue.

Revenue at IPO (\$mm)

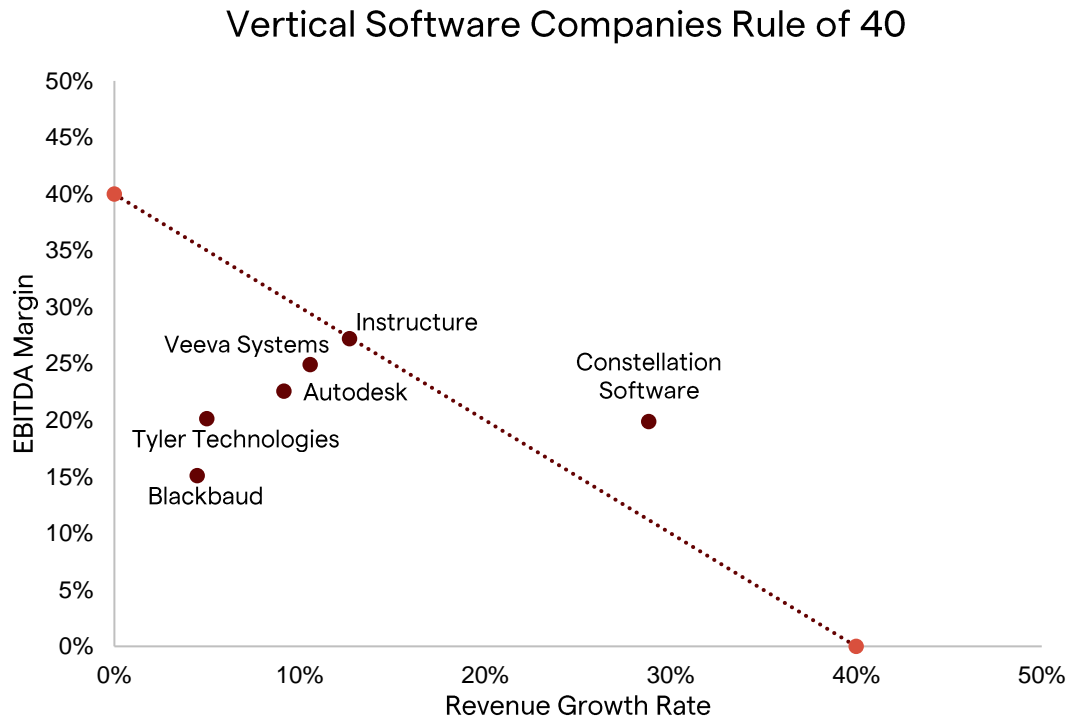


Company	IPO Year	Revenue at IPO (millions)
Toast	2021	\$1,705
Vacasa	2021	\$890
Procore	2021	\$515
Blend	2021	\$235
Guidewire Software	2012	\$232
Constellation Software	2006	\$211
Shopify	2015	\$205
Health Catalyst	2019	\$155
Blackbaud	2004	\$139
Ncino	2020	\$138
Veeva Systems	2013	\$130
2U	2014	\$110
Five9	2014	\$103
Lightspeed POS	2019	\$100
Envestnet	2010	\$98
Appfolio	2015	\$75
Instructure	2015	\$73
Autodesk	1985	\$10
Average	2010	\$285
Median	2015	\$139



Rule of 40

The **Rule of 40**, combines a company's revenue growth rate and profitability margin to assess its overall health and efficiency. A combined growth rate and profit margin value greater than 40 suggests a company can scale sustainably while maintaining financial health.



Rule of 40 value over 40



Key Points

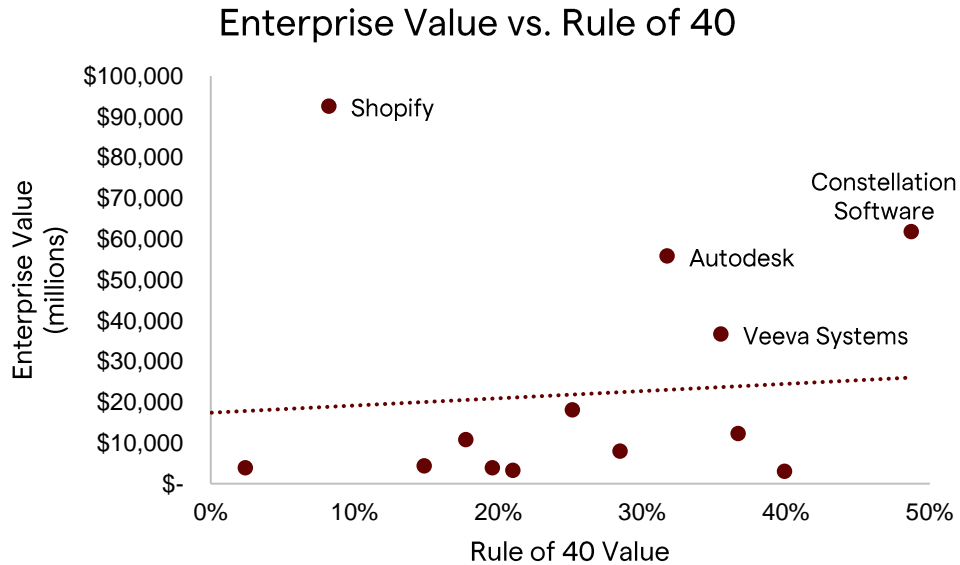
- Half of V-SaaS public companies prioritize growth over immediate profitability
- The profitable companies are typically 18 years older and valued \$11.3 billion higher on average than their non-profitable counterparts

Rule of X

The Rule of X takes the rule of 40 and prioritizes growth over profitability by applying a multiplier to the growth component of the equation. When compared to the rule of 40, the rule of X has a stronger correlation to enterprise value.

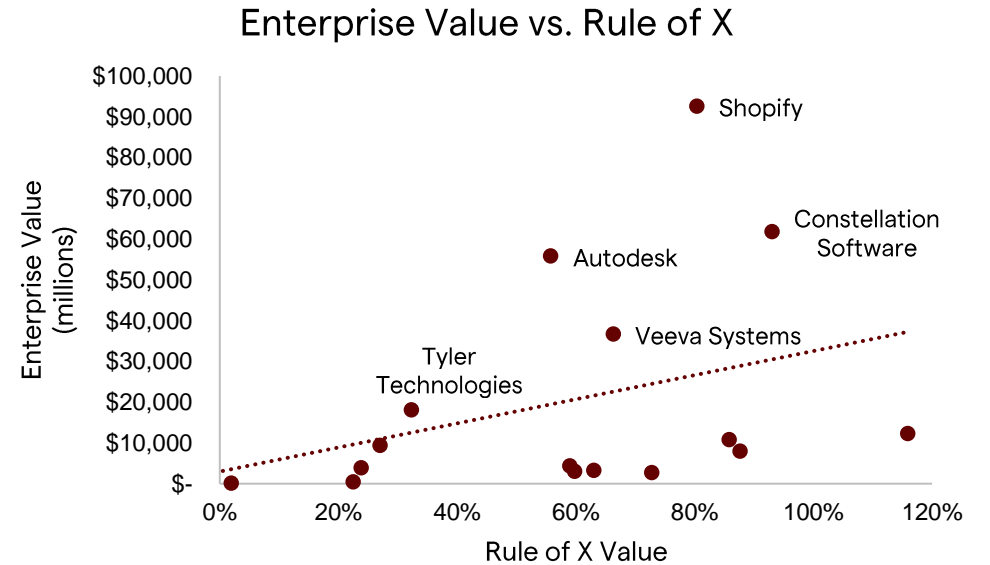
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Rule of 40 Correlation Value



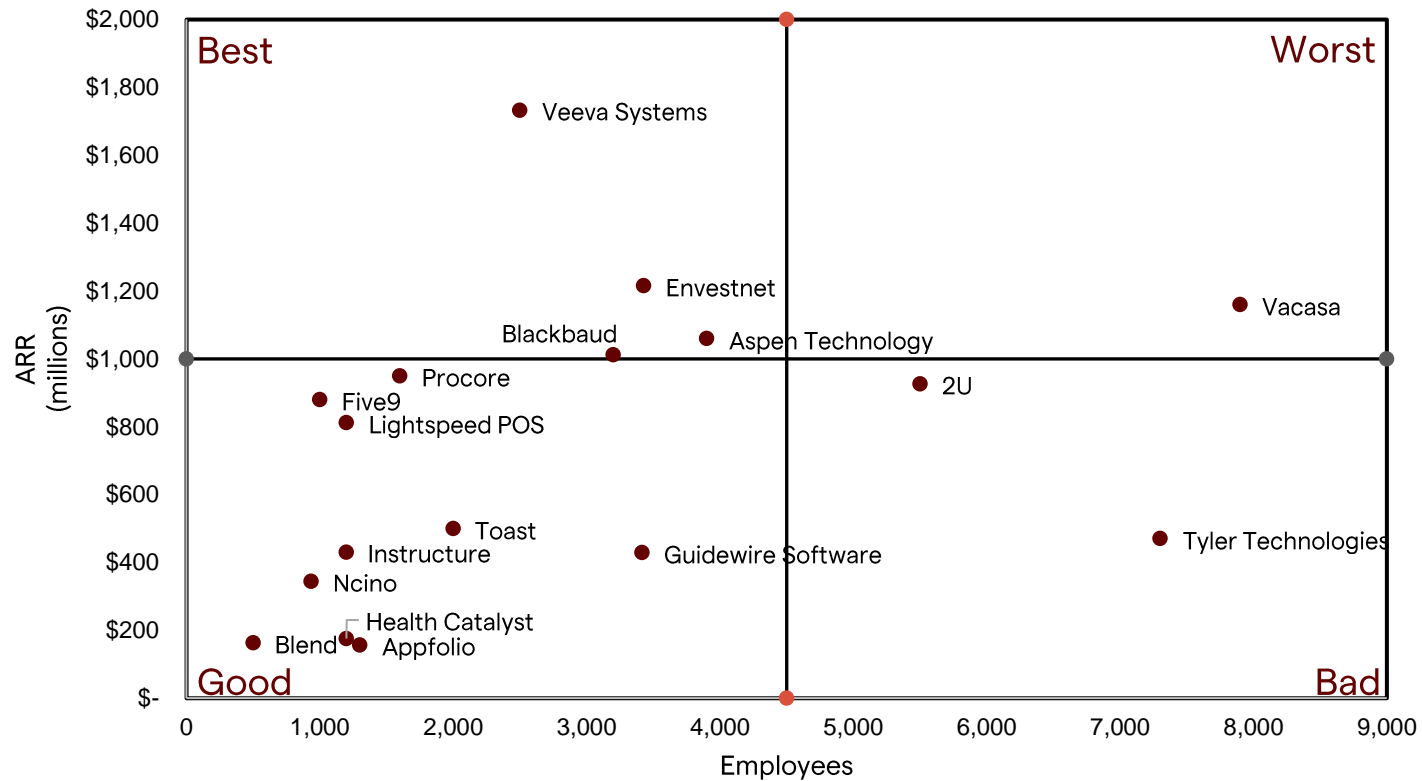
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Rule of X Correlation Value



Annual Recurring Revenue per Full Time Employee

ARR per FTE demonstrates a strong correlation with both market capitalization and total enterprise value, underscoring its significance in evaluating company performance and valuation. The quadrants below are ranked based on ARR per FTE and average Enterprise Value



Note
This graphic excludes outliers Constellation Software, Autodesk, and Shopify who all have ARR exceeding \$4B.



Annual Recurring Revenue per Full Time Employee

The following table sorts companies by ARR per FTE. Tyler Technologies has the lowest at \$60k, while Shopify has close to \$1M.

Company	ARR (\$mm)	Employees	ARR per FTE (\$mm)
Shopify	\$6,800	7,000	\$0.97
Five9	\$880	1,000	\$0.88
Veeva Systems	\$1,733	2,500	\$0.69
Lightspeed POS	\$812	1,200	\$0.68
Procore	\$950	1,600	\$0.59
Ncino	\$345	934	\$0.37
Instructure	\$431	1,200	\$0.36
Envestnet	\$1,216	3,429	\$0.35
Autodesk	\$4,651	13,700	\$0.34
Blend	\$164	500	\$0.33
Blackbaud	\$1,012	3,200	\$0.32
Aspen Technology	\$1,060	3,900	\$0.27
Toast	\$500	2,000	\$0.25
2U	\$926	5,500	\$0.17
Vacasa	\$1,160	7,900	\$0.15
Health Catalyst	\$176	1,200	\$0.15
Guidewire Software	\$430	3,415	\$0.13
Appfolio	\$157	1,300	\$0.12
Constellation Software	\$4,688	45,000	\$0.10
Tyler Technologies	\$471	7,301	\$0.06

ARR per FTE Benchmarks

Mid sized public companies have a higher median ARR per FTE than both small and large companies

ARR	Bottom Quartile	Median	Top Quartile
\$100M – \$300M ARR	\$130k	\$150k	\$240k
\$300M – \$500M ARR	\$130k	\$250k	\$360k
\$500M – \$1B ARR	\$490k	\$640k	\$730k
\$1 – \$4B ARR	\$270k	\$320k	\$350k
>\$4B	\$220k	\$340	\$660K

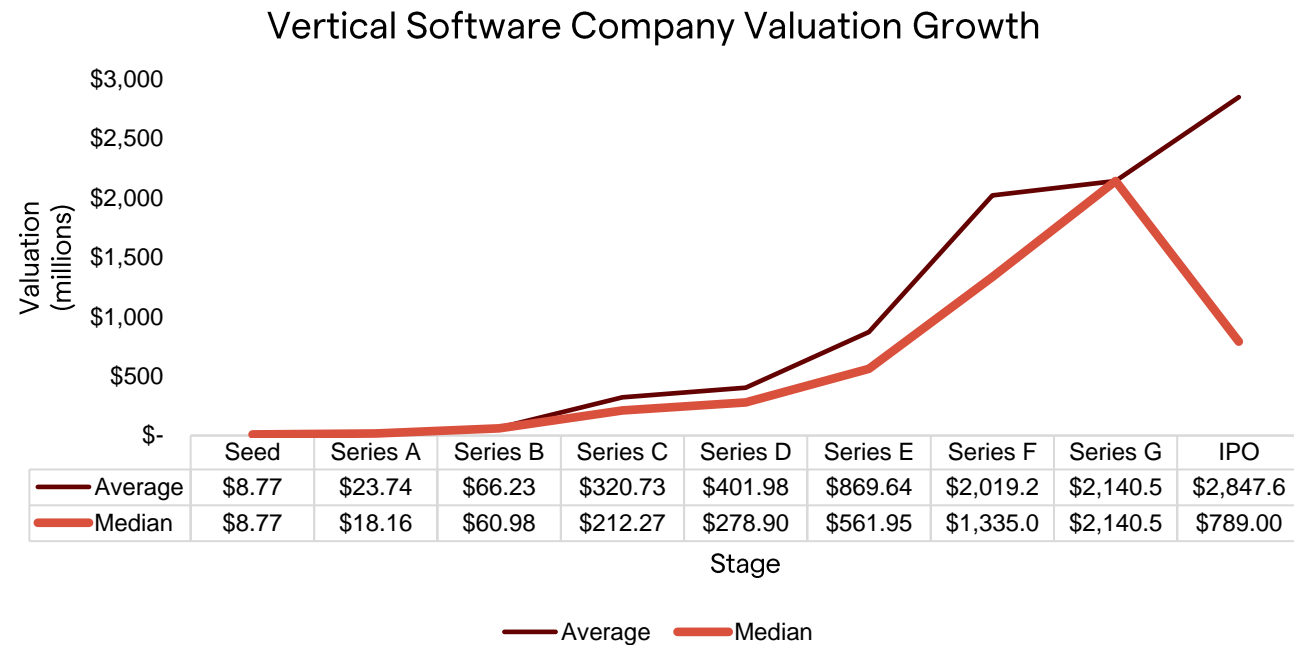
Key Points

- ❑ Efficiency of Mid-sized companies
- ❑ Scaling Challenges for Large Companies
- ❑ Potential for Growth Optimization for Small Companies



Valuation Growth

- On average, vertical software companies typically raise 3-4 rounds of capital with some exceptions like Procore, Blend, and Health Catalyst which have all raised up to and past Series F
- The average value of a vertical SaaS IPO of \$2.8B is largely over inflated by Toasts, Procore, and Vacasa, which all went public in 2021. The median value of \$789M may be more representative of the norm



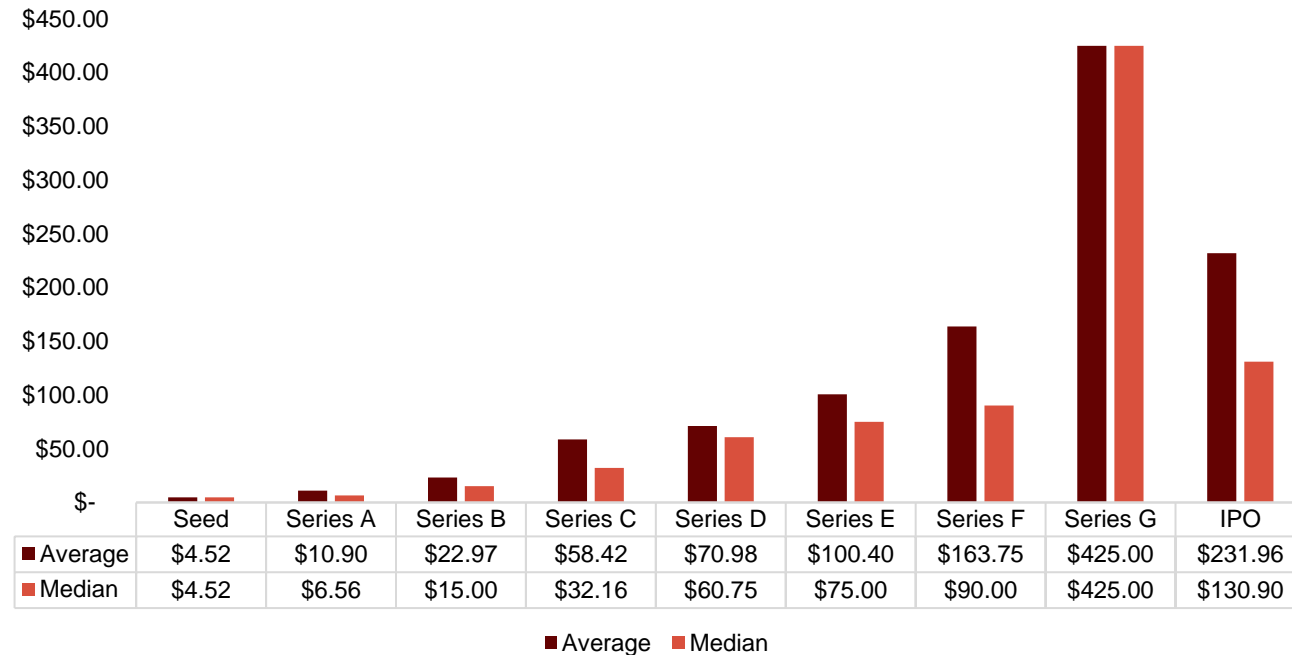
*Represents all 20 companies through Series G and excludes Procore's series H and Series I



Fundraising

- The average raise for a series A, B, and C vertical software company on the path to going public is \$10.9M, \$23M, and \$58.4M
- Outsized rounds by Vacasa, Shopify, and Toast skew these averages higher in the mid to later rounds of fundraising

Fundraising Trends for Vertical Software Companies



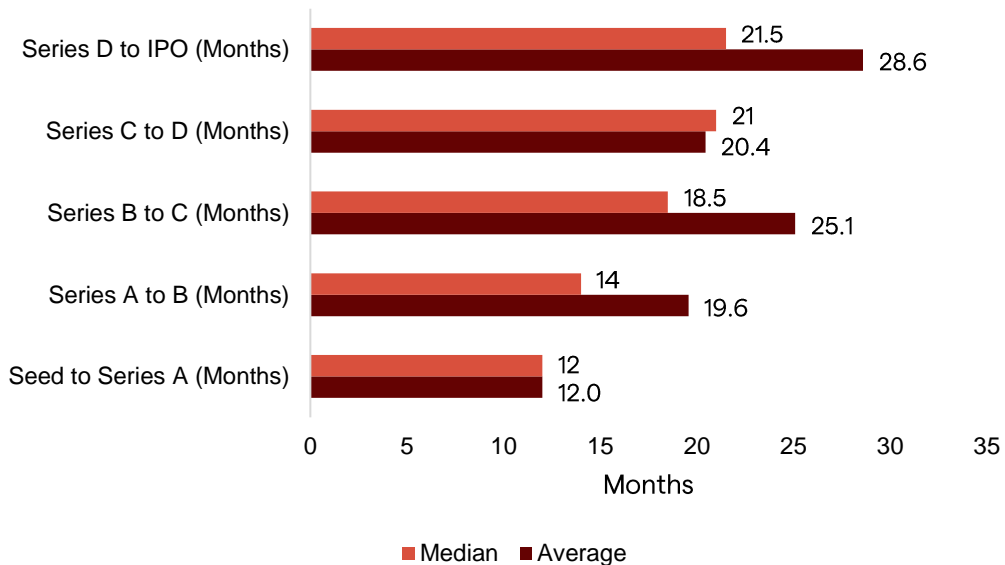
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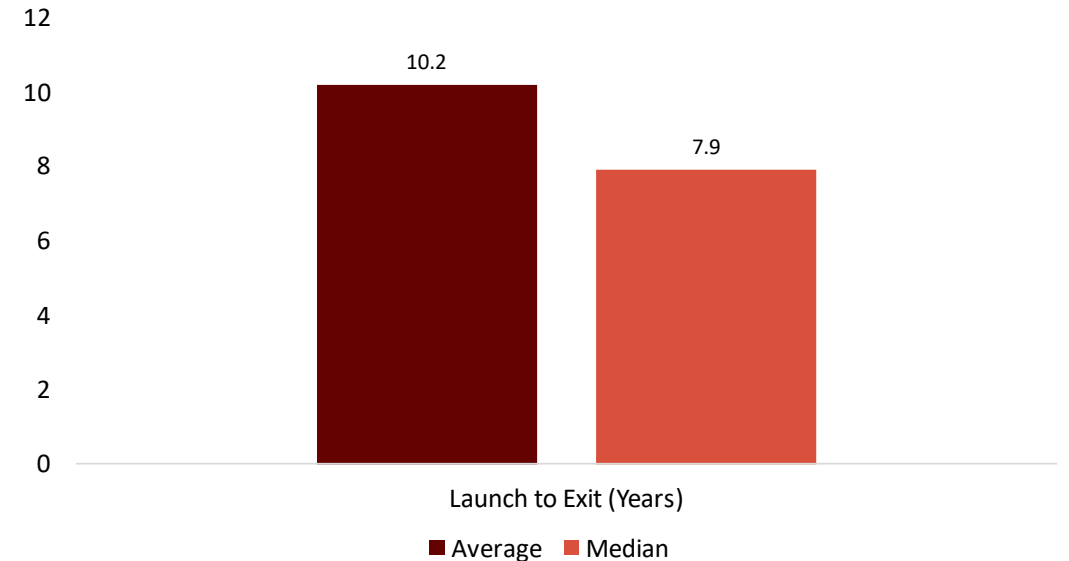
Fundraising Timeline

- The 20 publicly listed vertical SaaS companies took an average of 10 years since formation to go public, raising a series A in approximately one year, B ~1.5 years later, and C in ~2 years after that.
- The fastest companies that raised venture capital to go from form formation to public were Veeva Systems in 6 years and Envestnet in 4 years. The longest was Procore in 19 years

Time Between VC Funding Rounds



Vertical Software Company Time from Launch to Exit



Key Take Aways for Early-Stage Vertical SaaS Companies

1. **Enterprise Value Drivers:** Profitability, longevity, and mixed revenue streams proved to be great determinants in driving enterprise value for public companies
2. **Rule of X Superiority:** Consider Rule of X for better performance evaluation than Rule of 40.
3. **ARR per FTE Correlation:** ARR per FTE links strongly with market cap and total enterprise value. Prioritize optimization.
4. **Fundraising Trends:** Aim for 3-4 rounds of capital before IPO. Be aware of outliers.
5. **IPO Valuation Realism:** Median IPO value is \$789M. Understand average fundraising per round.



Public Vertical Software Company List Details

Company	Exit Value (\$mm)	Enterprise Value (\$mm)	Vertical	Founded	IPO Year	HQ	Ticker
Shopify	\$1,260	\$92,640	Ecommerce	2006	2015	CAN	NYS:SHOP
Constellation	\$360	\$61,856	General Verticals	1995	2006	CAN	TSE: CSU
Autodesk	N/A	\$55,930	Construction	1982	1985	CA	NAS: ADSK
Veeva Systems	\$2,450	\$36,770	Pharmaceutical	2007	2013	CA	NYS:VEEV
Tyler	N/A	\$18,130	Government	1966	1970	TX	NYS: TYL
Aspen	N/A	\$12,950	Process	1981	1994	MA	NAS: AZPN
Toast	\$19,970	\$12,350	Restaurants	2012	2021	MA	NYS:TOST
Procore	\$8,590	\$10,830	Construction	2003	2021	CA	NYS:PCOR
Guidewire	\$636	\$9,420	Insurance	2001	2012	CA	NYS: GWRE
Appfolio	\$388	\$8,000	General Verticals	2006	2015	CA	APPF
Five9	\$322	\$4,400	Call Centers	2001	2014	CA	FIVN
Blackbaud	\$340	\$3,940	Nonprofit	1981	2004	SC	NAS: BLKB
Envestnet	\$277	\$3,940	Asset	1999	2010	PA	NYS: ENV
Ncino	\$2,780	\$3,290	Commercial	2011	2020	NC	NAS:NCNO
Instructure	\$425	\$3,060	Education	2008	2015	UT	NYS: INST
Lightspeed POS	\$1,050	\$2,780	Ecommerce	2005	2019	CAN	TSE:LSPD
Blend	\$3,950	\$637	Mortgage Industry	2012	2021	CA	NY:BLND
Health Catalyst	\$912	\$495	Healthcare	2008	2019	UT	NAS: HCAT
Vacasa	\$4,350	\$156	Real Estate	2009	2021	OR	NAS: VCSA
2U	\$509	\$40	Higher Education	2008	2014	MD	TWOU

