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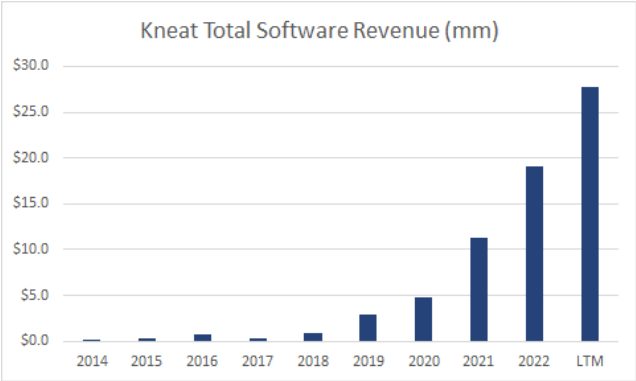
November 2023
TSX: KSI
C$227 mm Mkt Cap
C$2.95 Share Price

Thesis Summary

Kneat is a rare opportunity to own a high-growth, high-quality life sciences software company with a clear lead in a greenfield market. It is run by a strong founding team which is building a moat in an attractive compliance niche. Kneat is still a small, early-stage company today, but it has a long runway in its current end-market, a reasonable expectation of capturing a large proportion of its TAM and attractive adjacencies to explore in the years to come. Owners would clearly prefer to see a stronger balance sheet in light of the current cash burn and capital markets. While there is a reasonable likelihood Kneat will need additional equity capital, the risks associated with that fact seem acceptable. Shares trade at a reasonable valuation relative to the probability of a large, high-quality outcome. A double in three or four years is a reasonable prospect and an eventual upside of several times appears possible.



Business Overview

Kneat is a global enterprise software provider that sells a Validation Lifecyle Platform ("VLP") to customers primarily in the life sciences industries. Its largest customers are pharmaceutical companies with a commercial product, though validation requirements span companies in medical devices, earlier-stage life science companies, the ecosystem of service providers to these industries and companies outside of life sciences with a strong focus on Good Manufacturing Practice ("GMP") like food and beverage.

Kneat is demonstrating early traction which suggest it could be a large, high-quality business in time:

- In 2022, the company had Master Service Agreements with 8 of the top 10 global life science companies and recent commentary notes that "most" of the top 20 pharmaceutical companies are using Kneat.

- It last reported $31.4 million of total ARR, growing 74% year-over-year. ARR growth in 2024 and 2025 is likely to be in the mid-to-upper 30s.

- Many of the company's customers are in the early stages of adopting the platform across their global footprints, as the 245% and 158% net revenue retention figures in 2021 and 2022 suggest. At the end of 2021, Kneat believed the ARR potential in its 48 contracted customers exceeded $50 million (vs. the then $13.1 million ARR). It hasn't updated that figure since, but the customer base has grown more than 50%.

- Contract values are already high and growing. The company's top 10 customers in 2022 produced $1.3 million of revenue on average, up from $1.0 million in 2021. This has grown further to an estimated $1.88 million on an annualized basis in Q3 2023.

- Kneat's product is already extremely sticky, as its 100% customer retention each of the last two years suggests. It does sell on multi-year contracts and has had few renewals, but these 100% retention figures remain noteworthy. The attributes of the product further suggest high gross customer retention should endure in the decade to come.

Product Detail

What is Validation?

Validation is an FDA (or international equivalent) regulatorily required control process to assure that products are consistently safe. Validation requires that companies design, test and confirm that production processes and other relevant activities consistently work to produce expected results. Validation is an expansive set of requirements and a large pocket of spend for life science companies – estimated at 15-20% or more of the entire cost of a manufacturing project and a similarly large percentage of IT projects. Validation is required for activities that make immediate intuitive sense, like systems and devices that directly produce pharmaceutical product, but also for a wide variety of other business functions like facilities operations (water and HVAC) and computer systems. Validation even requires one to have a validation process that is validated!

Kneat shows the roughly 12 validation functions of a commercial pharmaceutical company in the chart below.

Validation requires substantial document creation, controls and testing. It is a cross-functional activity, though pharmaceutical companies have validation-specific roles, usually within their quality organization. It is a domain that requires deep expertise and there is an entire validation services industry. Validation is a function audited by the FDA and so audit readiness is a core component of any VLP. Data, documentation and auditability must be kept in good standing for very long periods, usually through the life of the product (20 years or more) plus an additional several years.

Historically, validation was a paper process and only in the last few years has it begun transitioning to a digitally-managed process, thanks to companies like Kneat. The industry often refers to this as “paperless validation” or “digital validation”. Validation is not a prescriptive set of procedures set by the FDA but a set of guidelines interpreted by industry. The guidelines have evolved over the years and current relevant topic areas include computer software assurance (versus validation), risk-based validation and Validation 4.0.

Validation-specific roles require deep expertise. Job postings can consistently be found at major pharma companies requiring or preferring expertise in validation platforms – often naming Kneat specifically in those postings alongside companies like Veeva and Sparta. Resumes can be found online quoting digital validation platform expertise – again including Kneat by name.

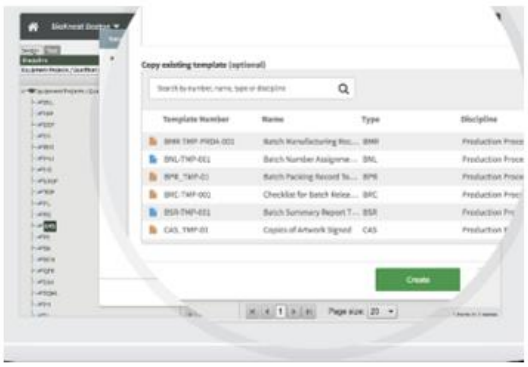
Product Detail

Kneat GX, the company’s namesake product is an industry and function-specific document management and testing platform. It forms the foundation for a company’s strategy to safely and consistently manage the production of products that can have life or death consequences.

Companies can customize Kneat, defining their workflows on the platform to suit their needs.

Specific functions of the platform include:

- General Workspace
- Template Building & Document Generation
- Document Reviews and Approvals
- Test Execution
- Logbook Management
- Reporting, Audit and Handover
- Document and Drawing Management

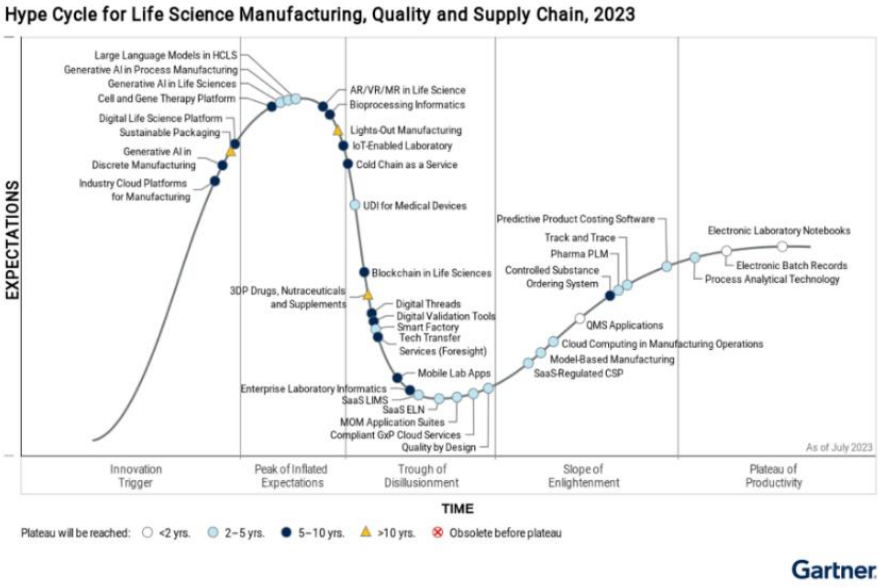


Pharma Tech Stack

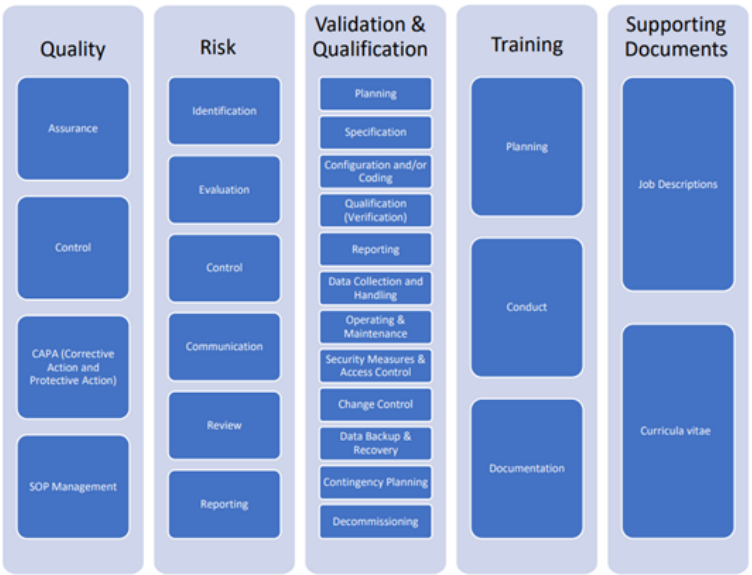
Validation, whether one considers it a quality or compliance or regulatory activity, falls within (what this author calls) the "production tech stack" of a life sciences company. Several of these areas are relatively mature, even if a new SaaS era has begun. Validation is one of many primarily paper-oriented processes that are beginning to digitize or emerge as new categories.

Life Science Production Tech Stack
Current / Relatively Mature Part of Stack
Enterprise Resource Planning (ERP)
Quality Management System (QMS)
Manufacturing Execution Systems (MES)
Engineering & Maintenace
Risk & Safety Management
Electronic Batch Records
Track and Trace Solutions
Emerging or Likely to Emerge Part of Stack
Validation
Product Lifecycle Management
Quality by Design
Process Knowledge Management
Equipment Changeover
Technology Transfer
Capital Project Delivery

Gartner produces a hype cycle for "Manufacturing, Quality and Supply Chain" which is shown below. Here Gartner include all lab activities. In 2023, digital validation was seen in the report as a "High" impact opportunity that would see mainstream adoption in the 5 to 10-year timeframe.



Industry participants sometimes group validation into the QMS suite as shown below:



Management, History and Culture

Eddie Ryan
Chief Executive Officer
Co-Founder

Brian Ahearne
Chief Information Officer
Co-Founder

Kevin Fitzgerald
Chief Product Officer
Co-Founder

Kneat was co-founded by a trio with a collectively strong industry background. Eddie, Brian and Kevin founded Kneat in Ireland in 2006. Eddie and Kevin came from mega-pharma operations backgrounds at Pfizer, while Brian had owned a software consultancy and development agency where he had experience in building pharma applications. Prior to his seven years at Pfizer as a manufacturing project engineer and manager, Eddie spent three years at Novartis as a commission and qualification engineer. Initially the founding journey was a slow one, as it wasn't until in 2014 that the current foundational product, Kneat Gx, was released into the marketplace. And it wasn't until 2018 that the company crossed $1 mm in revenue and began to move beyond its services foundation.

Kneat's first big break was in 2015 when Biogen became a customer. More than 18 months later, the company began to finally pay for the product and agreed to a public case study. This was a big win for a company with little capital and less than $1 mm of revenue. In 2016, Kneat went public in a reverse merger in Canada, accessing what it deemed to be the lowest cost of capital available to it at the time. By 2017, the company had completed work on its SaaS offering and began announcing many other Tier 1 client wins. The team's strategy, challenging as it may have been, of targeting first the largest pharma companies (which in addition to their size can influence the ecosystem around them) was ultimately proved prescient.

Despite a slow start and a large recent investment in product (averaging nearly 130% of ARR each of the last three years), the team has managed to effectively deploy capital against a large opportunity. On an estimated $64 million of total equity capital, ARR is now $31.4 million. For an enterprise product in a vertical that demands you win a large number of big customers to build a big business, this appears more than respectable.

Cap Raise History		
Date	Price / Share	Gross Proceeds (mm)
Pre '13 Est		$1.00
FY 2013		$2.19
FY 2014		$0.85
FY 2015		$2.53
Feb-16		$8.02
May-17	$0.60	$3.00
Mar-18	$0.90	$6.19
Feb-19	$1.05	$5.51
Feb-19	$1.05	$2.18
Feb-20	$2.10	$11.00
Feb-20	$2.10	$1.83
Apr-21	$3.00	$17.50
Apr-21	$3.00	$2.00
		$63.79

* CAD
^ Pre-Merger ('13-'15) figures based on Euro to CAD full-yr avg

ARR / Cap Raised Multiple	0.49 x
Cap Raised / ARR	2.03 x

Kneat is rated 4.4 stars on Glassdoor (on a small sample), with 100% approving of the CEO and 91% recommend to a friend. For reference, Veeva is rated 3.9 stars, with 87% approving of the CEO and 71% recommending to a friend.

Relative to software peers, Kneat is judicious with share grants. On a net basis, options, RSUs and DSUs awards have collectively averaged 1.7% of the prior year outstanding shares. The company's proxy makes specific reference to its share "burn rate," suggesting the company takes seriously its management of the denominator.

In addition to a small number of personally held shares, the founders' control Beek Investments which owns 17.4% of Kneat – a stake worth $40.6 mm at $3.00 per share. It is believed that the three co-founders roughly own 1/3 each of that entity. Since 2018, the founding team has sold only an inconsequential number of shares on two occasions. Each of the three founders earned roughly $300,000 (CAD) in cash compensation in 2022. The team is clearly well-incentivized to drive shareholder value.

Insider Ownership Summary

	Stake
Beek Investments	17.4%
Eddie Ryan	0.0%
Brian Ahearne	0.0%
Kevin Fitzgerald	0.0%
Founders	17.5%
Ian Ainsworth	2.4%
Wade Dawe	7.3%
Total Shares	100.0%

Two board members, Wade Dawe and Ian Ainsworth collectively own or control a further 9.7% of the shares. Ian is the Chairman of Extreme Venture Partners and Wade runs Brigus Capital. Both have actively bought shares in recent years, collectively buying 3.5 million shares since 2018 – both on the open market and in Kneat's financings.

Owners' interest in Kneat are well-served by a proven, no-nonsense founding team with strong and relevant experience. The team is well-incentivized and careful with equity capital. Eddie would not strike observers as a grandiose visionary, but rather a practical CEO focused first on winning the validation opportunity before exploring other opportunities. The biggest critique one might level against the team is the decision in recent months to use debt capital to support its cash needs instead of equity. It is a big bet on the next couple of years – particularly one on the insight the company has to cash flows – and one that on the outside looks aggressive given current capital markets, the size of the company and the early-stage nature of its business.

Market Landscape

Details on direct competition:

				LinkedIn Employee Count				
Company	Parent	HQ	Funding Status	Today	Yr Ago	Change	Pure VMS?	Notes
Kneat		Ireland	Public Company	276	240	15%	Yes	
ValGenesis		India	Private / $24 mm '21 Cap Rase - Morgan Stanley	541	475	14%	Yes	
Sware		United States	Private / $15 mm '22 Series A - Insight led	78	93	-16%	Yes	CSV Focused
FIVE Validation		Brazil	Private	38	36	6%	Yes	
OnShore Technology		United States	Private	9	8	13%	No / Yes	Services / "ValidationMaster" Product
Documentum	OpenText	United States	Public Subsidiary - Acquired by OpenText in '17 ($1.6 B)	20,641			No	Traditional Doc Mgt / Life Sciences Key Vertical
Tricentis Vera	Tricentis	Germany	Private Subsidiary - Acquired by Tricentis in '22		19		No	
Codebeamer GAMP 5	PTC	United States	Public Subsidiary				No	

Kneat is the clear leader in the validation niche.

- ValGenesis, founded in 2005 in India, is the most comparable and relevant direct competitor. Kneat sees it most often if there is a competitive tender, though Kneat has taken at least one early major pharma customer from ValGenesis. ValGenesis has almost twice the employees as Kneat and last raised money in 2021, securing $21 million from Morgan Stanley Expansion Capital. Now operating globally with a US presence, ValGenesis wins most often when it comes strictly to price (typically at smaller customers) and in India where there is a large pharma manufacturing base. As the revenue figures below show, Kneat has quickly surpassed ValGenesis in recent years and is now perhaps 3x the size (or more) in revenue. Financials show that ValGenesis is run at a small loss – suggesting it hasn't acted aggressively in the year after the cap raise. 2023 figures are not yet available for ValGenesis.

Kneat vs. ValGenesis Revenue							
	2017	2018	2019	2020	2021	2022	2023
Kneat Rev (USD)	$0.61	$0.34	$0.96	$3.05	$5.83	$12.25	$17.55
Change		-45.0%	185.1%	217.8%	91.3%	110.3%	43.3%
ValGenesis Rev (USD)	$0.97	$1.45	$1.91	$2.34	$2.64	$4.16	
Change		49.8%	31.7%	22.7%	12.6%	57.9%	
Relative - Kneat to ValGenesis	0.6 x	0.2 x	0.5 x	1.3 x	2.2 x	2.9 x	

^ million
* Kneat FY ends 12/31, ValGenesis ends either 3/31 - so 2017 is Kneat FY 2016

** Caveat – The ValGenesis figures include a revenue contribution from its US subsidiary. It is possible this doesn't reflect the entirety of its US-based business.

- Sware is a US-based, Series A company funded by Insight Partners. It is worth keeping a close eye on and specializes in Computer System Validation, one of the key sub-verticals within validation. Not surprisingly given the VC funding cycle, Sware's employee base is down year-over-year.

- Five Validation is a Brazilian-based company that appears focused primarily on the LatAm market.

- Veeva should always be respected. In 2021 it announced a validation product. That launch was considerably delayed and is only now in the market with demos. Early indications suggest the product is lacking relative to Kneat, as might be expected. Given the large number of major customers won by Kneat in recent years, Veeva may have gotten to market too late with an inferior product. After discussing validation in many conference calls and two prior investor days, validation specifically was not discussed at the 2023 Veeva investor day. Veeva may be more focused on converting its base of customers to its own CRM platform (from Salesforce) and on attacking IQVIA's stronghold.

- MasterControl is a highly respected private life sciences software company in the US. The quality and operations focused business recently raised a $150 million Series A at a $1.3 billion valuation! It privately grew to $100 mm of ARR without VC funding, suggesting a strong, well-run business that needs a good case study. Its product offerings are already quite broad and span both quality and operations – two areas immediately surrounding validation. It doesn't seem the company has a full-fledged validation offering, though the company does discuss some validation features on its website.

The outsourced validation service market is also relevant to Kneat. While some service providers have tried to launch their own products, most appear to be adopting the leading platforms that are most relevant to their client base. Validation outsourcing is important to life sciences as expertise is not widespread and validation needs for companies can ebb and flow based on internal production projects.

Just as Kneat will seek to expand beyond its core validation product in time, other software suppliers to the industry (like Sparta, Apprentice or QbD) will or are doing the same. There are reputable early-to-mid stage SaaS providers in the production tech stack with strong funding that could theoretically start to step on Kneat's toes, or, more probably, attempt to capture some of the incremental opportunities Kneat might explore.

Moat

Kneat's moat is already fairly strong for the size and stage of the business. It is growing wider and deeper.

- Switching Costs – There are multiple and material switching costs, the most important of which is the requirement to maintain validation data and auditability beyond the life of a manufactured product – which can exceed twenty years. This is highly consequential data and it isn't worth the risk of losing or impairing the quality of in a change of software providers. Some of Kneat's biggest customers will be upwards of $5 million in annual spend when fully deployed. A failed FDA audit, data integrity issues or safety incident investigations hampered by validation control issues is likely to have far higher actual financial and reputational damages. Products have been banned from the market, companies have faced large fines in the millions of dollars and there have even been bankruptcies. Inefficiencies during an internal audit can also be costly. Adding to switching costs is the fact that Kneat's customers are also in the process of rolling the platform out to a number of processes and manufacturing sites across the globe. Changing a major company-wide system in life sciences is costly – on training time, time to implement and restructuring a company's large number of processes on a new platform. Major core platforms in life sciences often stay in place for well more than a decade and, unprompted, customers compare a VLP to an SAP implementation. Finally, Kneat is becoming increasingly integrated into other major life sciences systems, deepening the pain of a major change.

- Network Effects – Network effects are only just starting to emerge at Kneat, but could be material in time. Like the construction industry (Procore), the life science industry involves a variety of participants working together to deliver projects and products. In Kneat's case, this means contract manufacturers, engineering and design firms, logistics companies, outside validation consultancy firms and software providers. The big companies at the center of that ecosystem are the life sciences companies themselves. There is a large center of gravity around them. Validation in many instances is about what outside suppliers and service providers are doing that may impact a product produced and sold by a life science company. It makes intuitive sense that companies at the center of that ecosystem should collaborate on the same platform. Even today life science companies are already duplicating validation work done by service providers.

- Cornered Resource – Winning a large share of the biggest companies in the world is important in the life science vertical. To build a big business with appropriate economics – one that can deploy the requisite R&D dollars to advance the market – a company must win a large share of the top 50 or 100 companies. Kneat appears to be on its way to such a strong position in the customers that matter most. And that revenue and customer insight (the "resources" in this expanded view of the power), will be unavailable for others to secure as the foundation for the necessary R&D to power relevant, alternative validation solutions. In a more rational VC landscape, this is even more true.

- Veeva is a good reference case. In 2016, Veeva noted that there were roughly 500 commercial life sciences companies. At the time, it counted 238 of those as CRM customers and 45 were seven and eight figures. It targeted 288 total customers by 2020. Using reasonable estimates and the disclosures at the time, revenue from those 7 and 8-figure customers may have been as high as two-thirds of the total. While Veeva didn't take 100% of the life science CRM market, it wouldn't seem rationale to compete against them for anything other than unique use cases, customer types or geographies [even if a chastened Salesforce might be trying!].

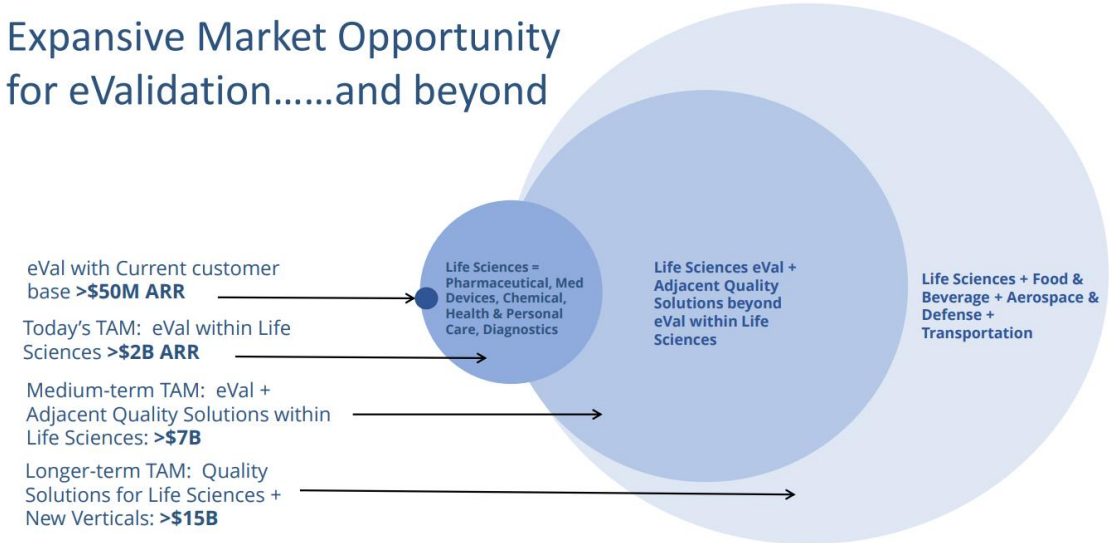
- Scale – Kneat is already at least 3x bigger than its next closest competitor, and likely growing that lead. As its customers build out their processes on Kneat, this should continue. Trying to compete against Kneat will be tough given the per customer innovation cost that would be required.

- Brand – While small, Kneat is quickly becoming a brand in the validation space. Validation is an esoteric, highly specific professional domain where Kneat is ahead as a thought leader. Many job postings and resumes refer to Kneat specifically by name.

TAM and Market Potential

Kneat's estimated TAM is large relative to its current size and the potential ARR within its already installed base is high.

In the past, Kneat estimated a $600 million validation TAM, which was comprised of validation tools for pharmaceutical and medical device companies in the US and Europe only. In 2023, it updated its TAM estimate to $2 billion, including all validation use cases across the entire globe and across the entire life science ecosystem. The changes imply a large perceived TAM in the ecosystem surrounding life science companies – including services, logistics, engineering, etc. Kneat further estimated a $7 billion TAM including adjacent-to-validation quality solutions.



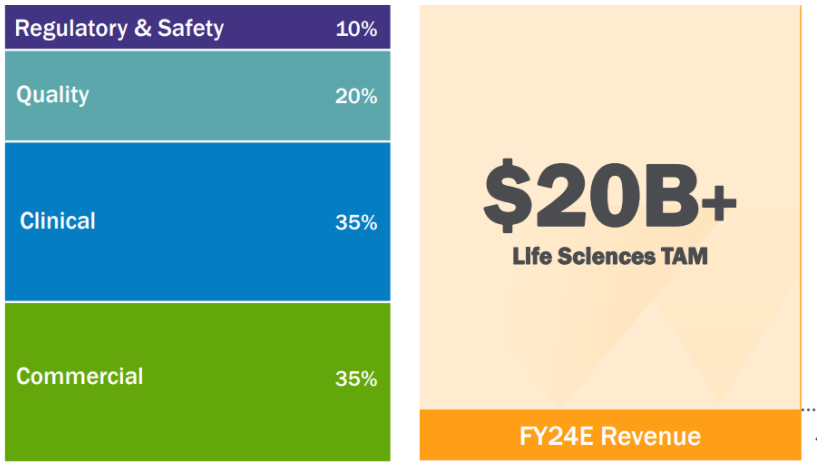
Kneat's management team no longer speaks in these terms or discloses user counts, but the $600 million TAM analysis appears to include the unit-based figures shown in the chart below.

US & Europe Life Sciences TAM	
Manufacturing Sites	4,000
Licenses per Site	30
License Fee	$5,000
Estimated TAM	$600,000,000

To judge the reasonableness of the original $600 million TAM estimate and its constituent components, one can look to the FDA which maintains a catalogue of approved pharmaceutical manufacturing sites (global sites that produce product for the US market). In the most recent report, it counted approximately 4,800 sites around the world, including 3,050 sites in North America and Europe (more than 2,000 in the US alone). The FDA figures include "No Application" sites (OTC, homeopathic and unapproved products) which constitute 40% of the total. These sites often do require producers to follow GMP practices, but these are a different class of producers and products. Given this FDA pharmaceutical catalogue excludes sites producing product for markets outside the US and, by definition, medical device manufacturing, the 4,000 figure Kneat used for the $600 million TAM estimate seems broadly within reason.

The 30 licenses per site was based on early Kneat experience, and would imply approximately 120,000 potential users in North America and Europe. It is unclear whether this user base would include the important CSV process. As a frame of reference, Sparta Systems (the global dominate leader in QMS for life sciences) disclosed "over 650,000 users" in 2014 and "more than 1 million users" in 2017. Validation is likely to have a smaller but broad base of users, including the quality organization, engineering organization and production. While far from definitive, the large Sparta user base appears to provide some modest additional outside support to the implied potential user base Kneat estimated in its original $600 million TAM.

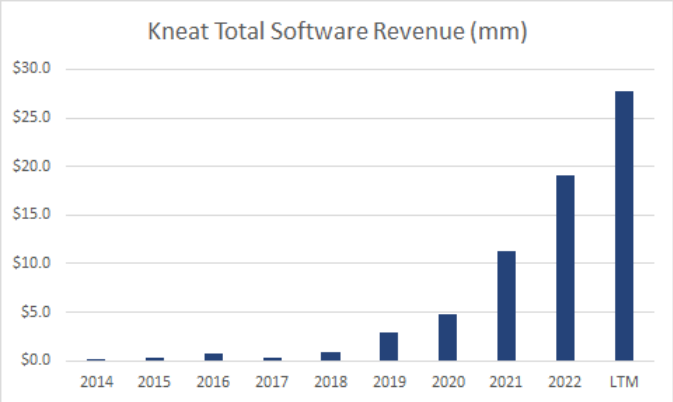
Looking beyond Kneat's disclosures, in Veeva's 2023 Investor Day it disclosed the below top-down update to its life sciences software TAM analysis. It estimates the global life sciences markets at $2 trillion (growing at 6%) and a 1% software penetration (likely to grow) – leading to a $20 billion current software opportunity. Veeva further estimates Quality at approximately a $4 billion TAM.



While TAM analyses are naturally fraught with trouble and imprecision, Kneat has also occasionally disclosed an ARR estimate stemming from the roll-out of the Kneat platform to its existing customers across their sites and validation use cases. At the end of 2021, that figure was $50 million or more than $1 million per customer across the 48 customers it had at the time. Since then, the customer count has grown to at least 78. With Top 10 customers now run-rating at an average of $1.88 million of revenue, it seems a reasonable estimate of the ARR in the current installed base might be $75 million or more. Kneat intends to officially update that figure with Q4 2023 results.

Financials and Relevant Considerations

- Software revenue has grown nearly 100x since 2017 (ARR has only recently been disclosed). Before 2017, Kneat was mostly an inconsistent services business with sporadic license revenue. During the last few years Kneat transitioned to a nearly 100% SaaS subscriptions. SaaS ARR grew 74% year-over-year in Q3 2023. As with many enterprise businesses, Q4 ARR additions are expected to be material – in Q4 2023 added ARR was 50% of the total for the year. Kneat is likely to end 2023 with approximately $36 million of ARR and $4 mm of run-rate services revenue.



- Customer growth continues to be impressive. While total customer count is not disclosed quarterly, named customers (large and strategically relevant) in 2023 have already exceeded each of the last 4 years. A full accounting of announced customers is in the Appendix. On recent calls, management has indicated a continued strong pipeline of new material customers.

Named Contracts by Year	
2023 YTD	8
2022	6
2021	5
2020	4
2019	6

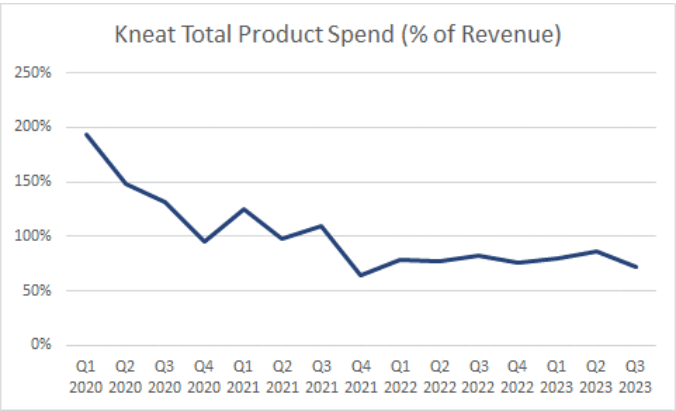
- Kneat's enterprise customers commit to large contract values reflective of a core system of operation and record. These are considered deployments expected to grow with time and remain in place for many years. Customer alignment with Kneat's product roadmap, level of ongoing investment and financial stability are all important considerations. Using Kneat's disclosures, one can see in the chart below that customer spend is high and growing. The average Top 10 customer is currently spending $1.88 million per year annualized – and that figure is still growing at a high rate. There is at least one

customer spending more than $3.2 million per year. While we don't have specific customer spend or cohort data, the extremely high net retention and quickly growing large contract values combine to support management's contention that there is a large incremental ARR opportunity in the already existing base. It would also seem the industry's large customers have spoken when it comes to picking the enterprise winner in the space.

Revenue per Customer Analysis	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Quarterly Top 10 % of Revenue	78.0%	78.0%	69.0%		66.0%	65.0%	55.0%		56.0%	56.0%	56.0%
Implied Annualized Revenue / Top 10 Customer	$734,879	$982,406	$1,030,637		$1,372,695	$1,442,481	$1,265,343		$1,784,139	$1,800,790	$1,882,779
Change					86.8%	46.8%	22.8%		30.0%	24.8%	48.8%
10% or More Customers					2	1	1		1	1	
10% Annualized Minimum					$2,079,841	$2,219,201	$2,300,623		$3,185,963	$3,215,696	

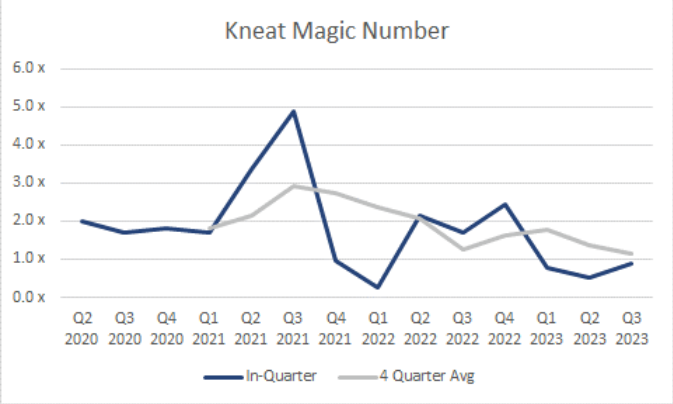
- Kneat's cash burn is high, but likely to inflect substantially in 2024. On a run-rate basis, Kneat is burning approximately $21 million which is 63% of revenue. Given the burn and management's decision to support it with a recent credit facility, the balance sheet is far from pristine. It wouldn't be unreasonable to expect an equity offering in the next 18 months. Kneat currently has $2.4 million in net financial debt. By the end of 2024, the company is likely to report $10 million or more of net debt – while still in a position of expecting further burn in 2025. Even these estimates (among other assumptions), would require keeping total operating expense growth to a few percent in 2024. The company has not guided to 2024 expectations, but LinkedIn employment trends show a flat employee count the last six months and total operating expenses are no longer growing quarter-over-quarter. Kneat's 261 total employees at the end of 2022 resulted in an ARR per employee was still less than $100,000 (CAD), far below potential. Recent LinkedIn trends suggest that after a major incremental investment in 2022, Kneat has already begun a leveraging phase, with a flat employee count the last 6 months. Expected ARR per employee at the end of 2024 of $166,000 (CAD and assuming no employee growth) would suggest it has enough employees for the size of the business in 12 or even 24 months. For reference, Veeva reached $362,000 (USD) of revenue per employee in 2014 at $200 million of revenue (30% of which was services – a much higher percentage than Kneat).

- Important context is needed when considering Kneat's current high cash burn. Kneat is spending a large sum building its platform. The last 12 months, nearly 80% of total revenues have been spent on product (expensed R&D less amortization plus capitalized intangibles). Such a figure speaks to the "quality" of the company's current burn – particularly when combined with attractive sales efficiency. The absolute product investment is multiples of the ValGenesis revenue and is a line item which should leverage meaningfully the next two years.



- Sales efficiency has been strong for Kneat in the early days, even if one recognizes Kneat only began building a traditional enterprise sales function in 2022. Early sales and marketing efforts were founder and product-led. The magic number history below shows a recent 4-quarter average of 1.16x, which likely understates Kneat's efficiency given a long enterprise sales cycle (approaching one year) and the large investment in the sales organization that began 18 months ago. ICONIQ's recent benchmark efficiency report quoted a top quartile figure of 1.2x in the $25-50 million ARR company size.

As an aside, in that same report, Kneat would rank at about the median high growth rate and well-above the net revenue retention top quartile.



- Kneat's partner channel is expanding – the partner and service channel network has collectively grown more than 50% since Q2 2022. Partners include outsourced validation consultancies, pharma construction and design firms and others. This network should allow Kneat to capture TAM associated with the important consultancies to pharma companies and down-market opportunities. It is also permitting Kneat to become a pure play SaaS business. Professional services are now down to 7.5% of revenue in Q3 2023 from 25% in Q2 2022.

- Kneat's margin potential is high. Such low gross churn in an enterprise product is a strong foundation for margins – particularly when combined with large ACVs and a strong emerging moat. Life science software is also a vertical where strong margins are possible. There are few great public comparables, but Veeva on an LTM-basis produced an 18% GAAP EBIT margin (down from a peak of 27%). Kneat already has less service revenue than Veeva. IQVIA produced a 13% GAAP EBIT on an LTM basis and Instem's peak EBIT was 13.4%. When OpenText acquired Documentum in 2016 (an enterprise document management system with significant vertical market focus, including life sciences) it noted that Documentum would be aligned with its operating model within 18 months and that its 34-38% adjusted operating margin target was "strengthened" by the acquisition. Ideagen, a QMS system with some pharma exposure, produced a peak EBITDA margin of 17% in FY 2020.

Valuation and Return Potential

Growth Logic, Projection and Outcome Notes

- Kneat is the category winner in validation and is able to produce margins associated with a strong moat. The $222 mm revenue imputes a 30% share of a $600 million TAM and a much smaller share of the incremental $1.4 billion TAM Kneat estimated from global validation and supply chain related spend. This latter category of customers is referred to as "Ecosystem Customers."

- Kneat has no success (or failure) in other product categories.

- Projections include a cap raise in 2024.

- There are relatively few precedent transactions in the public markets or by public companies, though a selection is included in the appendix. The most relevant transaction is the Sparta Systems acquisition by Honeywell at the end of 2020. Honeywell paid $1.3 billion for a revenue base estimated at more than $150 million – a 7.5x multiple, assuming $175 million in revenue. The $1.3 billion appears supportive of a billion dollar plus outcome being possible in a similar life science product category.

Valuation and Return Summary

Kneat Projection and Return Summary	
Share Price	$2.95
NPAT Multiple	22.0 x
Implied EV/Rev	5.2 x
IRR	18.2%
Multiple of Capital	5.5 x

	2023	2026	2028	2033
Revenue (mm CAD)	$33.5	$83.7	$130.1	$222.4
Avg Annual Growth Through Period		35.7%	31.3%	21.4%
GP Margin	66%	75%	77%	79%
EBIT Margin	-44%	7%	19%	29%
% of Revenue				
S&M	40%	28%	24%	21%
R&D	49%	28%	24%	20%
G&A	21%	12%	10%	9%
Shares Outstanding	79.0	88.3	90.9	96.6
Non-Financial KPIs				
Core Life Science Customers	94	167	205	257
Ecosystem Customers	5	95	165	270
Top 10 Customer - Avg Revenue	$1,658,882	$3,033,703	$3,907,410	$5,845,581
Cohort % of Total Life Science Revenue	50%	36%	30%	26%
Top 20% Customers (Ex Top 10) - Avg Revenue	$464,487	$849,437	$1,094,075	$1,461,395
Cohort % of Total Life Science Revenue	12%	24%	26%	28%
Bottom 80% Customers - Avg Revenue	$177,103	$212,359	$273,519	$379,963
Cohort % of Total Life Science Revenue	37%	28%	28%	28%
Ecosystem Customers - Avg Revenue	$92,897	$106,180	$125,819	$151,985

Act II Possibilities

Kneat is already observing customers utilizing the platform for paper-intensive compliance and quality needs outside validation. While there is so much to do in validation, these early signals and the logic behind them and others suggest that Kneat has strong Act II potential. Below are several Act II potential domains sorted by Kneat's potential right to win.

- Validation outside life sciences is a natural extension for Kneat, even if less lucrative. Kneat has already at least one large disclosed consumer goods company using the platform. Food and beverage, chemicals and other industries that follow good manufacturing practice use validation procedures to maintain quality. Kneat is not yet actively devoting material resources to the non-life science market.

- Tech Transfer is one activity that is already being demonstrated as a use case on the platform by customers. Tech Transfer involves the hand-over of manufacturing processes, professional expertise and documentation either internally in an organization (from development to commercialization or after an acquisition) or between organizations (from a pharma company to a CDMO as one example). Industry sources suggest this is another large pocket of spend – one that doesn't appear to have any emerging product leadership or notable start-ups.

- Capital project delivery is the critical project management workflows required as pharmaceutical manufacturers design, construct and validate facilities and production processes. Validation is a critical piece of new projects and could allow Kneat to move upstream in the process.

- Electronic Batch Records ("EBR") are a more mature product area that Kneat sees as still having potential. At the company's recent 'Validate' user conference, equity analysts noted some discussion of the building blocks for an EBR offering. This would bring Kneat more into competition with companies like MasterControl and the Manufacturing Execution Systems ("MES") providers.

- Quality by Design ("QbD") or Product Lifecycle Management ("PLM") are emerging considerations in pharmaceutical production and stem from recent FDA commentary. QbD involves a wholistic approach to quality management across the entire lifecycle of a product, from design to production. In addition to documentation requirements, it involves using earlier-stage data analytics to control downstream production tolerances of a pharma product. There are companies beginning to make progress in this domain and it may not be the most obvious expansion of Kneat's platform, but validation would seem to be a necessary ingredient as this emerging piece of the tech stack develops.

- Using the critical validation position to build a complete SaaS Quality Management System ("QMS") could be a long-term opportunity. While Sparta and Veeva compete in this space, Kneat does see an opportunity to first enter and better serve the mid-market QMS space.

Risks

- Kneat has chosen to avoid dilution in recent months and raised debt capital. It just entered a net debt position (ignoring leases). If it does not achieve its anticipated growth and expense management, the balance sheet could become an issue quickly. Even if the company does achieve its anticipated growth and burn targets, the company will be losing money and in a net debt position, which could spook public market investors and dramatically raise the cost of additional equity capital.

- Veeva and MasterControl, with their resources and clout in the industry, could become more of a threat to Kneat's core validation product in the years to come. Sware, with its core expertise in the important CSV category could become a threat.

- Kneat may not be able to successfully extend the reach of its platform in most customers to a substantial portion of the 12 validation sub-functions. It may not be able to reach the high wallet shares that seem possible and fully capture the ARR potential in its customer base. Kneat's customers may not proceed with full roll-outs across their entire operation as seems reasonably predictable.

- Large portions of the company's TAM are in geographies where Kneat is less strong. There are large pharma revenue pools in China and Japan for example. There are also large manufacturing revenue pools in India. Kneat may not be able to deeply penetrate certain geographies or supply-chain participants in the life sciences landscape that are important to capturing a large piece of the incremental $1.4 billion TAM Kneat identified.

- Validation approaches, FDA recommendations and philosophies do evolve. Such evolutions could reduce demand for some of Kneat's product suite or demand material changes to the platform. The recent shift from Computer Software Validation ("CSV") to Computer Software Assurance ("CSA") and Validation 4.0 are two current examples. Given the burden of validation, there are constant industry discussions about how to reduce its impact while maintaining safety and quality.

- Kneat may not be able to build a material business outside of its validation specialty. It may not be successful in pursuing an Act II.

Veeva – Abbreviated Case Study

Veeva has been an amazing success as a business and for investors – even investors in the IPO. Despite ending day-1 trading at 14.8x forward revenue, the share price rose 4.6x in the nearly nine years through FY 2023, producing a 17.8% CAGR. It ended the period at 10.2x EV/FWD Revenue. What allowed Veeva to accomplish that record is a combination of the following:

- Relatively modest share grants by industry standards. The gross (before expired or cancelled) number of options granted averaged 1.1% per year relative to the prior year's outstanding figure and the number of RSUs similarly averaged 0.9% per year

- Material revenue growth of 29.8% per year on average (just about all of which was organic). It came public with approximately $210 million of revenue in a large market that today it estimates at $7 billion.

- Strong margins and sales efficiency. GAAP EBIT margins grew from 23.2% in the year before IPO to 27.3% at the peak in 2022. Non-GAAP EBIT grew from 23.7% pre-IPO to a peak of 40%. During the 9 years post IPO, it maintained a GAAP "Rule of 40" that averaged 53.4%. It achieved a S&M efficiency of 1.36x (in year rev change / prior year S&M, which is admittedly not a precise measure).

- High market share, high per-customer spend and low churn. By 2016, the company's CRM product had penetrated 48% of the estimated commercial life science addressable customer base. In 2016 45 of its

238 CRM customers were seven or eight figure customers. At one point, Veeva noted that large pharma companies can spend $20-30 million in ACV for full CRM deployments.

- Very minimal additional equity capital was raised. In a 2014 follow-on offering it raised $23.5 million (vs. $194.4 million in the IPO).

- Veeva was successful in extending its product to a full platform / suite. It had a material Act II beyond the original CRM market – and successfully entered the clinical data and quality domains.

Kneat Relevant Customer Metrics

- In Q2 2016, Veeva had 198 CRM customers (at which point incremental CRM customer growth slowed materially) – at approximately the same time it estimated 500 total commercial life science companies in its addressable market.

- Using disclosures from the 2016 Investor Day (and making reasonable assumptions), one can see how important the large customers are in life science software to building a large company. One might reasonably estimate the top 10 customers could be 30% and the top 50 could be 67% of revenue. Veeva had eight 8-figure customers and thirty-seven 7-figure customers - combined those 45 customers were critical.

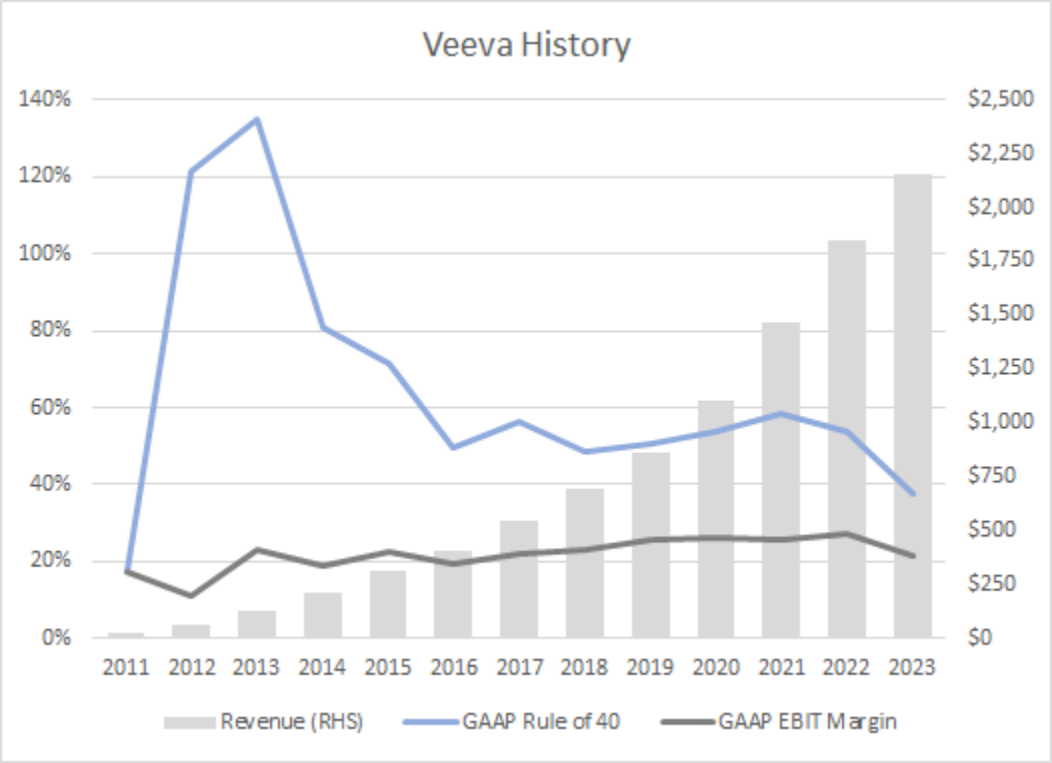
2016 Analyst Day Disclosures	Q2 2016	2020 Outlook
CRM Customers	198	248
Non-CRM Customers	267	252
Revenue Run Rate (mm)	$400	$1,000
% CRM	75%	50%
CRM Revenue	$300	$500
Non-CRM Revenue	$100	$500
7-Fig Customers	37	
8-Fig Customers	8	20
Over $1 mm Customers	45	
Under $1 mm Customers	153	
CRM Rev / Customer (mm)	$2.02	$4.03
Non-CRM Rev / Customer (mm)	$0.37	$1.98

Assume All 7 and 8-Figure are CRM (Assumed Averages)	
% of Customers 7-Fig	18.7%
% of Customers 8-Fig	4.0%
Implied Min 7-Fig Revenue	$148
Assumed Avg (mm)	$4.0
% of Revenue	37.0%
Implied Min 8-Fig Revenue	$120
Assumed Avg (mm)	$15.0
% of Revenue	30.0%
Implied Total Min	$268
% of Total Revenue	67%
Implied Non 7 or 8-Fig Revenue	$132
Implied Max Rev / Customer	$1.13

Here is the Veeva CFO talking about the general structure of their business at the 2023 Investor Day:

> Taking a step back, I want to share some details regarding the industries we serve. We have 3 main industry segments today. Biopharma, medtech and consumer products. Biopharma is where we started and represents 94% of our current revenue. We have over 1,000 customers today, including large global pharma companies as well as preclinical biotechs.
>
> Medtech and consumer represent smaller portions of our revenue, but each amounts to a significant opportunity as we look forward.
>
> Within biopharma, 2/3 of our revenue comes from enterprise customers, you can generally think of these as our top 50 customers. SMBs represent our second largest cohort, contributing 25% of our revenue across about 700 customers. This includes companies with multiple billions of dollars in revenue all the way to specialized biotechs commercializing for the first time.
>
> Our SMB segment excludes our emerging biotech customers, which represent 4% of our total biopharma revenue across about 300 customers. We define emerging biotechs as companies with less than 1,000 employees and no approved commercial product. And contract research organizations, or CROs, represent 5% of our revenue.

If there was one chart to summary the impressive financial performance of Veeva through the years, the one below would probably be it!



Appendix

Kneat Major Customer Announcement History

Date	Customer	Contract Type	Size	Customer Type	Employees	Facilities	Division?	Term (Yrs)	Notes
27-Nov-23	-	-	"Global Consumer Leader"	Healthcare	> 20k	25 +	-	-	C&Q - no MSA?
31-Aug-23	-	MSA	-	Medical Supplies	> 30k	> 12	-	3	Serves facilities in 100 countries; starting w/ CSV; manufacture and distributor
26-Jul-23	-	MSA	-	CDMO	> 4k	-	-	3	Rapidly growing Asian innovator; selected ahead of capacity expansion
28-Jun-23	-	MSA	"Leading Global"	Pharma	> 10k	> 12	Yes	3	computer and equipment to start at EU facility - Pharma HQ in Asia
24-Apr-23	-	MSA	Top 20	CDMO	> 20k	> 100	-	-	computer validation to start
3-Apr-23	-	MSA	Top 20	Pharma	-	Dozens	Yes	3	elogbook mgt in labs - "demonstrates appeal outside validation"
23-Feb-23		MSA	"Global Powerhouse"	Healthcare	> 100k	> 80	-	3	Devices to Pharma; computer/equipment validation to start
26-Jan-23	Fresenius Kabi	MSA	-	Pharma	> 40k	-	-	3	equipment, facilities validation
27-Oct-22	-	MSA	Fortune 500	Healthcare	> 40k	-	-	3	all validation, all divisions - starting w/ computer systems
27-Oct-22	-	MSA - Expansion	Top 10	Pharma	-	-	-	3	2k users going to 6k
18-Mar-22	-	MSA	-	EU National Health Service	> 110k	5	-	-	lab validation
17-Mar-22	-	MSA	Top 10	Life Sciences	> 90k	> 50	-	3	3 yr roll-out; now 8 of top 10 life sciences; global CQV
10-Mar-22	-	MSA		Generics Manufacturer	> 7k		-	3	equipment to start
20-Jan-22	-	MSA	Top 15	CPG	> 50k	> 40	Yes	4	US computer validation to start
22-Dec-21	-	MSA - Expansion	-	Biopharma	> 80k	> 50	-	3	moving from 11 to 50 sites; enterprise-wide; now 7 of top 10 life sciences have MSAs
19-Jul-21	-	MSA	"One of World's Leading"		> 10k	-	-	3	corp e-val across all sites, divisions - starting w/ computer
2-Jun-21	-	MSA	"One of World's Leading"	Engineering, Consultancy, Design Firm	> 15k	-	-	3	food and life science clients
7-May-21	-	MSA	Top 10	Biopharma	> 70k	-	-	5	after Dec 2020 single site contract - starting w/ facilities, utilities and equipment
25-Mar-21	-	MSA	"One of World's Largest"	CDMO	> 14k	-	-	5	across all sites over several yrs
5-Aug-20	-	MSA	Tier 1	CPG	> 30k	-	-	3	start w/ US facilities, utilities, equipment in several sites
11-Jun-20	-	MSA	Top 10	Biopharma	> 45k	-	-	3	
25-Mar-20	-	MSA	Top 10	Pharma	> 25k	-	-	3	CQV to start
6-Feb-20	-	SaaS	Top Tier	Medical Device	> 20k	-	-	3	CSV to start - didn't sound divisional
11-Dec-19	-	MSA	"One of World's Leading"	Biopharma	> 10k	-	-	5	
25-Nov-19	-	MSA	"One of World's Largest"	Pharma	> 60k	-	-	5	
17-Sep-19	-	MSA	"One of World's Largest"	Pharma	-	> 100	-	3	
22-Jul-19	-	-		CDMO	-	-	-	-	
17-Jun-19	-	SaaS	Leading mRNA Company	Biopharma	-	-	-	3	CSV to start
11-Mar-19	-	MSA	International Leader	Biopharma	> 20k	-	-	-	C&Q to start in US

* MSA - Master Services Agreement
* CDMO - Contract Development and Manufacturing Organization
* CQV - Commissioning, Qualification & Verification
* CSV - Computer Systems Validation
* C&Q - Commissioning & Qualification

ICONIQ Benchmarks – August 2023

THE ICONIQ GROWTH

Enterprise Five

ICONIQ Growth standards across five key metrics we believe are highly representative of a B2B SaaS company's overall growth and efficiency:

The ICONIQ Growth SaaS Glossary

See our SaaS Glossary for a complete guide to the key metrics included in this report, plus:

- ✓ Cost classification
- ✓ Revenue recognition
- ✓ Cohort analysis
- ✓ Unit economics

Median & Top Quartile Performance by ARR Range[1]

Median Top Quartile

		<$25M	$25-$50M	$50-$100M	$100-$200M	$200M to IPO	Post-IPO[4]
1	YoY ARR Growth *(EOP ARR – prior year EOP ARR) /prior year EOP ARR*	125% 240%	90% 130%	70% 100%	50% 70%	40% 60%	45% 70%
2	Net $ Retention *(BOP ARR + expansion ARR - gross churn ARR) / BOP ARR*	105% 125%	110% 120%	110% 125%	110% 120%	110% 115%	120% 130%
3	Rule of 40 *YoY ARR growth + FCF margin[2]*	*Less Relevant*	*Less Relevant*	25% 55%	15% 45%	30% 50%	45% 70%
4	Net Magic Number *Current Q net new ARR / prior Q S&M OpEx[3]*	0.8x 1.7x	0.8x 1.2x	0.9x 1.4x	0.8x 1.2x	0.6x 1.1x	0.8x 1.6x
5	ARR per FTE *EOP ARR / EOP FTEs*	$95K $135K	$140K $190K	$175K $215K	$200K $235K	$220K $255K	$270K $345K

Given the current environment, we expect that **median benchmarks shown here will be more realistic for companies to target in 2023**, but have included top quartile as reference for "best in class" performance regardless of time period

Pharmaceutical Executive 2020 & 2022 Top 50				
Company Name	**Country**	**Rx Sales in 2020**	**Rx Sales in 2022**	**Note**
Pfizer	United States	$35.6	$91.3	
AbbVie	United States	$44.3	$56.2	
Johnson & Johnson	United States	$43.1	$50.2	
Novartis	Switzerland	$47.2	$50.1	
Merck	United States	$41.4	$49.6	
Roche	Switzerland	$47.5	$47.9	
Bristol Myers Squibb	United States	$41.9	$45.5	
AstraZeneca	England	$25.5	$43.0	
Sanofi	France	$35.8	$40.4	
GlaxoSmithKline	England	$30.6	$38.3	
Takeda	Japan	$27.9	$29.7	
Gilead Sciences	United States	$23.8	$26.6	
Eli Lilly	United States	$22.6	$25.5	
Novo Nordisk	Denmark	$19.4	$25.4	
Amgen	United States	$24.1	$22.5	
Boehringer Ingelheim	Germany	$16.5	$19.5	
Bayer	Germany	$19.0	$18.9	
Moderna	United States	-	$18.4	
Viatris	United States	$11.5	$16.0	
CSL	Australia	$9.7	$13.1	
Teva Pharmaceutical	Israel	$11.0	$12.1	
Astellas Pharma	Japan	$11.5	$10.5	
Vertex Pharmaceuticals	United States	$6.2	$8.6	
Merck KGaA	Germany	$7.6	$8.4	
Biogen	United States	$10.7	$8.0	
Otsuka Holdings	Japan	$7.2	$7.4	
Daiichi Sankyo	Japan	$8.0	$7.1	
Regeneron Pharmaceuticals	United States	$5.6	$6.9	
Bausch Health Companies	Canada	$4.9	$6.6	
Organon	United States	-	$6.0	
UCB	Belgium	$5.5	$5.7	
Perrigo	Ireland	-	$5.4	
Sun Pharmaceuticals	India	$4.6	$5.4	
Les Laboratoires Servier	France	$5.2	$5.2	
Chugai Pharmaceutical	Japan	$3.9	$5.1	
Abbott Laboratories	United States	$4.5	$4.9	
Grifols	Spain	-	$4.9	
Eisai	Japan	$5.1	$4.6	
Sino Biopharmaceutical	Hong Kong	$3.9	$4.5	
Fresenius Kabi	Germany	$4.2	$4.3	
Shanghai Pharmaceuticals	China	$3.6	$4.0	
Horizon Therapeutics	Ireland	-	$4.0	
Jiangsu Hengrui Medicine	China	$4.2	$4.0	
Jazz Pharmaceuticals	Ireland	-	$3.6	
Menarini	Italy	$3.5	$3.6	
Ipsen	France	$3.0	$3.4	
BioNTech	Germany	-	$3.3	
CSPC Pharmaceutical Goup	China	$3.2	$3.3	
Incyte	United States	-	$2.7	
Novavax	United States	-	$1.6	
Alexion Pharmaceuticals	United States	$6.1	-	Acquired by AstraZeneca
Allergan	Ireland	$4.8	-	Acquired by AbbVie
Yunnan Baiyao Group	China	$4.7	-	
Sumitomo Dainippon	Japan	$4.0	-	
Mitsubishi Chemical	Japan	$3.1	-	
Aurobindo Pharma	India	$3.0	-	
Ono Pharmaceutical	Japan	$2.9	-	
Endo International	Ireland	$2.9	-	Bankrupt
STADA Arzneimittel	India	$2.8	-	

Extended Pharma Software Production, Quality and Risk Landscape

Category	Company	Parent	Employees
Validation	ValGenesis		541
	Kneat		276
	Sware		78
	FIVE Valdiation		38
	OnShore Technology		9
	Documentum	OpenText	20,641
	Tricentis Vera	Tricentis	1,352
	GAMP 5	PTC	-
Quality Management	Dassault		-
	Veeva Systems		7,962
	Ideagen		917
	MasterControl		791
	Caliber Technologies		616
	Sparta Systems	TrackWise / Honewell	408
	ETQ	Hexagon	320
	AmpleLogic		287
	Greenlight Guru		191
	Qualio		146
	Scilife		77
	ZenQMS		68
	Arena	PTC	200
	Compliance Quest		317
	Qualityze		62
	QT9		49
	AssurX		46
	Pilgrim	IQVIA	42
	Enzyme		33
	Dot Compliance		132
Compliance / Risk & Safety Mgt / Traceability	TraceLink		909
	Online Business Applications		187
	QPharma		129
	rfXcel	Antares Vision Group	91
	Leucine		64
	AB Cube		19
	Cunesoft	Phlexglobal	14
	Ultralight Labs		10
	PharmaTrace		9
	CQRM	Xybion	
	Opvia		22
Tech Transfer	Kalypso	Rockwell	
	Atos		
	Aspen Tech		
	Skyland PIMS	IDBS / Danaher	
Capital Project Delivery	Eida		30
Manufacturing Execution	Werum	Korber	
GMP Information Mgt	Syncade	Emerson	
	Pharma Suite	Rockwell	
	MasterControl		791
	POMS	Constellation	36
	Apprentice		150
	Tulip		350
	Lonza		15,670
	Batchline		14
	InstantGMP		12
	AmpleLogic		291
	SimplerQMS		21
Electronic Bath Records	MasterControl		791
	Werum	Korber	
	Syncade	Emerson	
	Pharma Suite	Rockwell	
	Opcenter Execution	Siemens	
	Tulip		350
	L7 Informatics		165
	Apprectice		150
	Chemiasoft		85
	MESbook		64
	QT9		51
	POMS	Constellation	36
	Azumuta		19
	Batchline		14
	InstantGMP		12
	Dassault		
ERP	BatchMaster		350
	SAP		
Process or Product Lifecycle Management / Quality by Design	QdB Vision		37
Process & Knowledge Management	fluxa	Rockwell	
	LeanQdB	QbD Works	2
	Emerson PKM	Emerson	
	Within3		157
	MasterControl		791
	Fusion QBD	S-Matrix	12
	GxpManager	Application Builder	40
	Scilife		78
	Propel		
	Arena Solutions	PTC	
	Agile	Oracle	
	Sartorious		8,872
	Agilent		17,220
	ValGenesis		541
Supply Chain / Logistics	Supply Shift		65
	Quartzy		100
	ZAGENO		139
	Vineti		44
	SCAIR	Intersys	27
	Veratrak		15
	Manhattan Associates		

Table 1. Inventory Shift Over FY2018–FY2022 for Countries with Greater Than 50 Sites

Country	Sites in FY2022 Catalog	5-Year Review of Sites in the Catalog			
		Sites Maintained	Sites Removed	Sites Added	% Net Change
United States	2,019	1,427	437	694	13%
India	603	448	59	162	17%
China	430	296	110	143	8%
Germany	187	156	17	31	7%
Canada	158	142	27	39	8%
Italy	149	125	10	9	-1%
France	141	115	13	28	11%
Japan	134	113	25	24	-1%
United Kingdom	105	84	18	22	4%
South Korea	100	45	46	56	10%
Spain	88	68	11	24	15%
Switzerland	82	62	10	21	13%
Mexico	64	45	14	19	8%
Ireland	59	51	7	9	3%
All Others	495	350	83	161	16%
Total	**4,814**	**3,527**	**887**	**1,442**	**12%**

Relevant Transactions

Company	Buyer	Business	Year	Valuation (B)	EV / Rev	EV / EBITDA	EV / FWD Rev	Growth	Gross Margin	EBITDA Margin	EBIT Margin	Employees
InnaPhase	Thermo Fisher	Laboratory Information Management System	2004	$0.07	2.5 x	-	-	-	-	-	-	-
STARLIMS	Abbott	Laboratory Information Management System	2010	$0.12	3.0 x	15.7 x	-	5.5%	65.8%	19.0%	17.0%	162
Werum IT Solutions	Korber	Pharma Manufacturing Execution System	2014	-	-	-	-	-	-	-	-	-
Accelrys	Dassault Systemes	Lifecycle Mgt, Data Mgt/ Modeling & Simulation / La	2014	$0.74	4.0 x	101.0 x	3.7 x	4.0%	73.4%	4.0%	-5.6%	735
Zinc Ahead	Veeva	Life Science Content Management	2015	$0.13	4.3 x	-	-	25.0%	-	0.0%	-	-
Cartagenia	Agilent Technologies	Variant Assessment, Reporting and Mgt	2015	$0.07								36
IMS Health	IQVIA	Healthcare Data / Disease & Treatment Data	2016	$13.64	4.3 x	17.9 x	4.2 x	8.0%	50.2%	24.4%	17.3%	-
IDBS	Danaher	Lab Management / Electronic Lab Notebook	2017	-	-	-	-	-	-	-	-	-
Core Informatics	Thermo Fisher	LIMS / ELN / Scientific Data Management	2017	$0.10	9.4 x	-	-	-	-	-	-	-
Finesse Solutions	Thermo Fisher	Bioproduction Mgt & Control / Censors & Controllers	2017	$0.22	4.4 x	-	-	-	-	-	-	-
SHYFT Analytics	Medidata	Trial Mgt & Insights / Mobile Solutions / Sales Data	2018	$0.18	7.8 x	-	6.0 x	-	-	-	-	-
Genohm	Agilent Technologies	LIMS / ELN / Workflow Mgt	2018									40
Medidata Solutions	Dassault Systemes	Clinical Research & Trial Management	2019	$6.03	8.8 x	58.3 x	7.5 x	16.0%	73.6%	11.4%	5.4%	1,998
Crossix	Veeva	Patient Data & Analytics	2019	$0.43	7.0 x	30.2 x	-	53.1%	68.4%	23.0%		-
OmniComm	Anju Software	Clinical Trial Mgt / Data Capture & Mgt	2019	$0.08	3.0 x	24.0 x	-	-4.0%	83.0%	7.6%	5.5%	174
Sparta Systems	Honeywell	Quality Management System	2020	$1.30	-	-	-	-	-	-	-	250
rfXcel	Antares Vision	Supply Chain Track & Trace	2021	$0.12	7.1 x	-	-	25.0%	85.0%	-	-	63
Dotmatics	Insightful Science	R&D Data Mgt / ELN	2021	$0.61	16.3 x	-	12.7 x	18.0%	93.2%	-	2.0%	-
STARLIMS	PE - Francisco	Laboratory Information Management System	2021									
Skyland Analytics	IDBS	Biopharma PLM	2021	-	-	-	-	-	-	-	-	-
ETQ	Hexagon	Quality Management System	2022	$1.20	-	-	16.0 x	-	-	-	35.0%	185
Ideagen	PE - HG	Quality Management System	2022	$1.37	14.1 x	132.2 x	10.4 x	8.5%	91.6%	9.0%	0.3%	697
Certara	PE - Arsenal	Biosimulation / Regulatory Information Mgt	2022	-	7.7 x	26.3 x	7.1 x	15.0%	60.5%	26.0%	10.4%	1,150
Vera	Tricentis	Digital Validation	2022									
Instem	PE - Archimed	Trial Management / Regulatory Information Mgt	2023	$0.25	3.0 x	19.9 x	2.8 x	10.0%	38.0%	13.7%	10.2%	500