



ALPHA **CHALLENGE**
Kenan-Flagler Business School
The University of North Carolina

November 24, 2024

Team Number: 14

Students: Anik Mehta, Shivi Lakhtakia, and Taylor Lemmon

NYSE: CRL

Recommendation: BUY

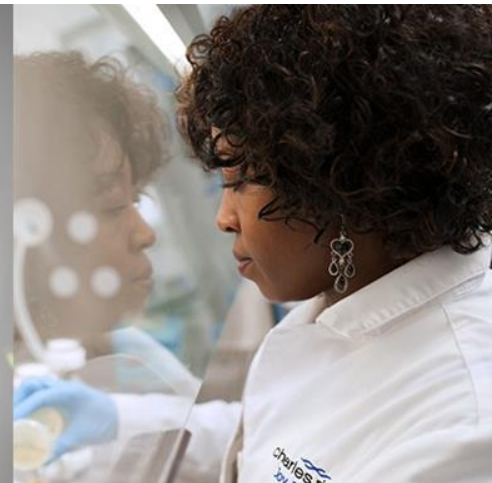
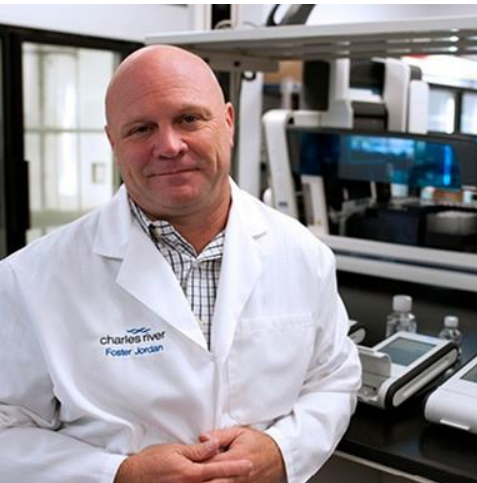
Target Price: \$335.39 (71% upside)

November 22, 2024

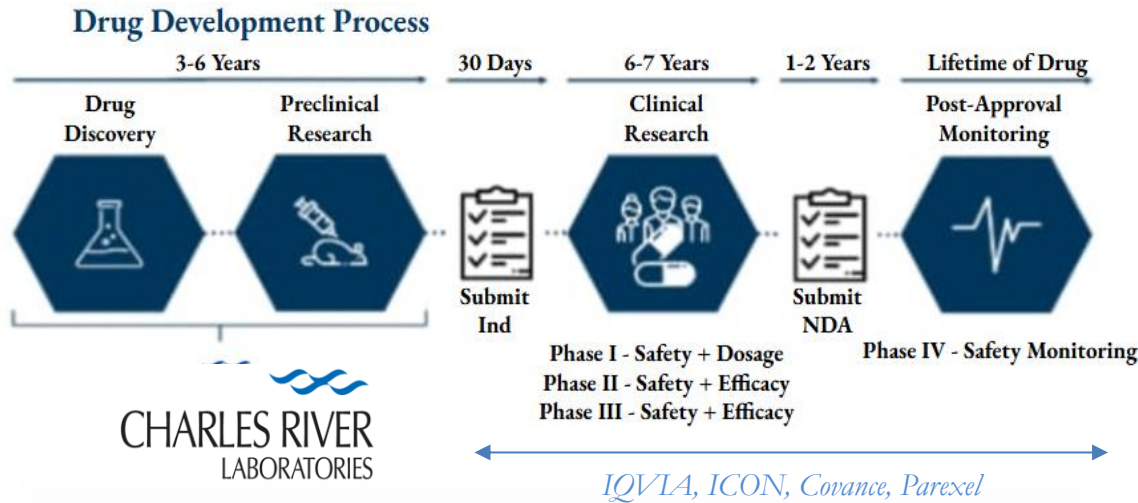


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Contributing to the Search for Healthier Lives™



What is CRL's business?



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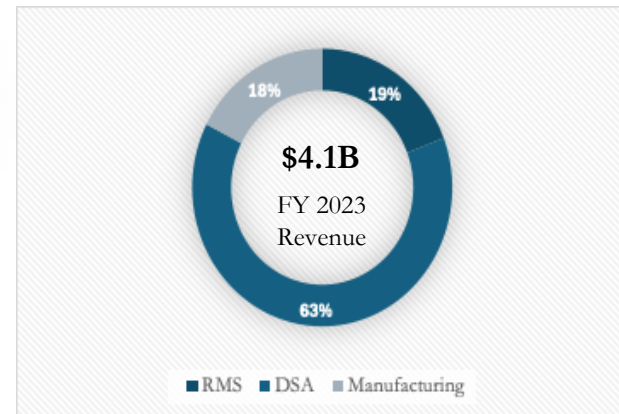
CRL is #1 preclinical CRO - 80% of all FDA approved drugs over past 5 years

- The global CRO market size which is essentially outsourced BioPharma sales opportunity is ~\$92B.
- Out of which, CRL is a market leader in pre-clinical development presenting a \$20B total addressable market
- The **\$20B TAM as per TD Cowen** is expected to keep growing at an 11% CAGR through 2032.

CRL's Business Segments

- Research Model and Services (RMS)**
- Discovery & Safety Assessments (DSA)**
- Manufacturing Activities (CDMO)**

65% of CDMO revenue from gene-modified cell therapy



We recommend BUY for a target price of \$335 - 70% upside with limited downside risk

Investment Thesis

The recent market pullback offers an attractive entry point into a market-leading, high-quality business.

Underappreciated Long-term growth

- Normalization of BioTech/Biopharma funding with continued outsourcing
- New Cell & Gene Therapy in CDMO business and biologics to drive growth

Margin Expansion not factored in current price

- Restructuring cost base should benefit margins LT
- CDMO and RMS segment margin should continue to increase and recover to normalized pre-COVID-19 levels

Valuation

- Earnings downgrades have stabilized and CRL's headwinds are priced in
- Anticipate ~70% upside over the next 12 months

Current Market Stats

<i>\$M (except per share data)</i>	
Share Price	\$195.77
Market Cap	10,010
Enterprise Value	12,609
Revenue (LTM)	4,061
Operating Margin %	20%
EV / EBITDA	10.8x
P / E	19.0x
Price Target	\$335.39
Upside	71%

Thesis 1: Underappreciated Long-term Growth (1/4)

Market has over corrected for lack of visibility in biopharma funding – presents a good entry point to buy a #1 pre-clinical CRO player as bio-pharma funding recovers

CRL is a high moat business with key preclinical differentiation

CRL : market leader with a diversified base

COMPETITION

Company	Company Type	Research Models	Discovery	Preclinical	Clinical
Charles River Laboratories	Public	X	X	X	
Albany Molecular Research	Private		X		
Envigo	Private	X			
Evotech	Public		X	X	
ICON	Public			X	X
IQVIA	Public				X
Labcorp / Covance	Public		X	X	X
Medpace	Public				X
PAREXEL	Private				X
Pharmaceutical Product Dev	Private		X	X	X
PRAH Health Sciences	Public				X
Syneos Health	Public				X
Wuxi Appotec	Public		X	X	X

Source: Company reports

CRL is the largest preclinical player in the space and the only business that can act as a “One-Stop-Shop” for all preclinical needs

Strong financial metrics speak to underlying business quality

- Strong FCF generation is a key strength of CRL Avg FCF margin of ~12.4% over the past 5 years
- CRL has been able to use this FCF to add to its growth through disciplined strategic M&A
- CRL also uses cash to buyback shares opportunistically
- Leverage target of ~2.5x Net Debt/ EBITDA maintained

Top 25
customers
~30% of
sales

80%
of FDA
drug
touched
by CRL

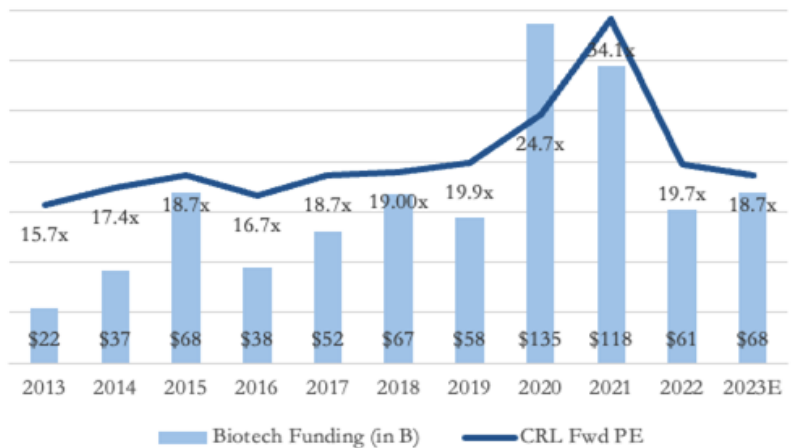
Highly diversified customer base.
Largest customer makes ~LSD% of sales

CRL is a leading pre-clinical CRO with #1 position in research models (~40% global share), #1 position in outsourced DSA (~30% share). **CRL touched ~80% of all FDA approved drugs** over past 5 years showcasing its critical base of services provided



Thesis 1: Underappreciated Long-term Growth (2/4)

CRL's revenue and valuation has always tracked bio-pharma funding trends



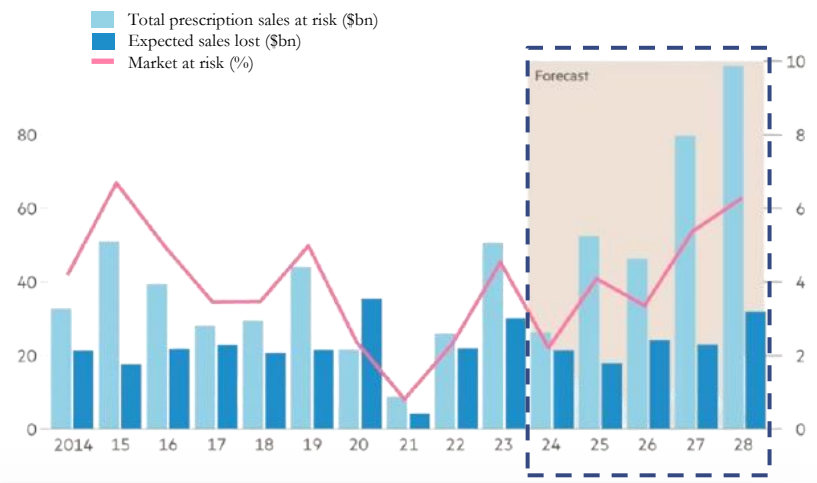
	2015	2016	2017	2018	2019	2020	2021	2022	2023
Rev Growth %	5%	23%	11%	22%	16%	12%	21%	12%	4%

Source: Bioworld, Evalueatepharma

- FY25 and FY 26 consensus for sales is 1% vs 10yr CAGR of 12%
- We believe CRL can deliver stronger growth in a macro environment that is normalizing supported by recovery in biotech funding and continued biopharma R&D

BioPharma funding will normalize as Pharma ramps up its investment in R&D

Pharma companies are facing patent cliffs in 27-28



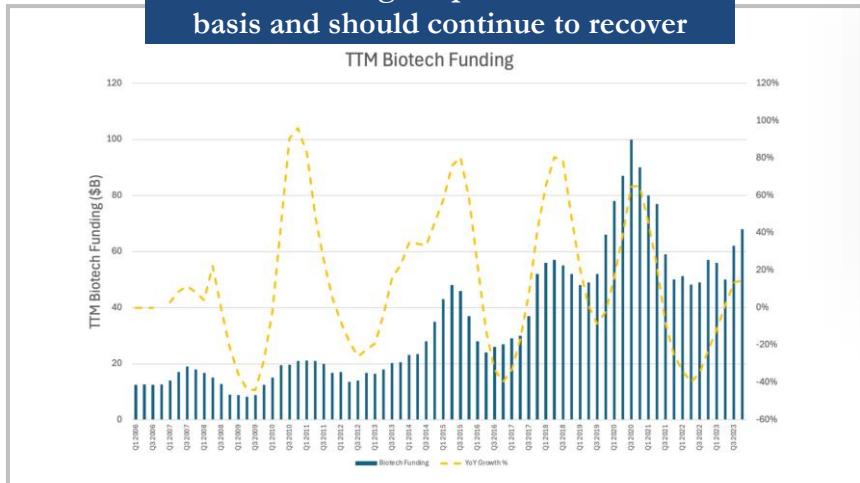
Source: ft.com

- Over the next 5 years, over \$450B worth of Pharma sales is projected to be at risk
- CRL is well-positioned to capitalize on this rebound, leveraging its pre-clinical expertise in drug development

Thesis 1: Underappreciated Long-term Growth (3/4)

Near term funding has been challenged but we see the market recovering.. With Biotech funding up in 2024 and expected to normalize

Biotech funding is up ~20% on a TTM basis and should continue to recover



- Overall, Biotech funding is up ~20% on a TTM basis
- Management’s commentary on biotech funding is comforting: “Forward-looking demand indicators for **biotech clients continued to trend more favorably vs. 2023** –Leading to our belief that the biotech demand environment will continue to recover....demand environment does not appear to have further deteriorated”

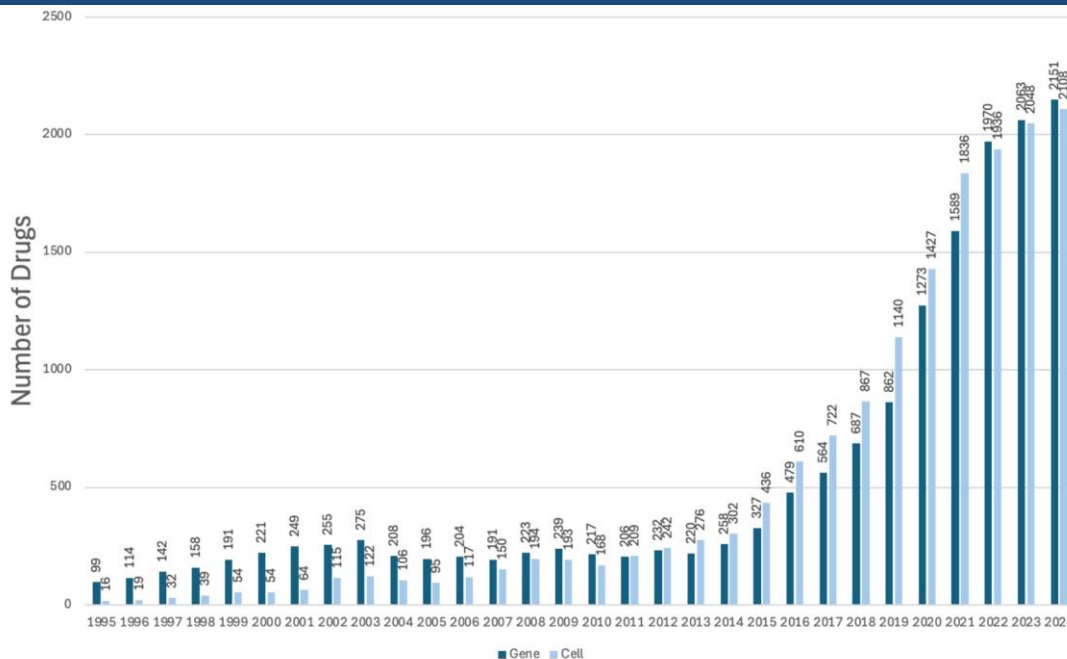
BioSecure Act could be a further catalyst

Like other strategic sectors, the **US government is seeking to place barriers on the role of China in the biotech sector.** These barriers come in the form of the **BIOSECURE Act**, which is a bipartisan bill, that in essence will prohibit certain US Federal Governmental agencies from engaging with “biotechnology companies of concern”. Listed companies like Wuxi Biologics have ~13% of the CRDMO industry market share. The act could have major implications for CRL’s CRO and CDMO business and add to further growth over the next few years.

Thesis 1: Underappreciated Long-term Growth (4/4)

CRL has increased its exposure to high-growth markets such as cell & gene manufacturers, a market that is expected to grow at 15% CAGR over the next few years

The ongoing rise of cell and gene therapies (CG&T)



Source: Pharmaprojects

- In 2023, cell and gene therapies saw a record number of FDA approvals
- 8 therapies approved despite challenging market conditions (vs 5 in 2022 and 2021 each)
- As production scales up, significant growth is anticipated in the advanced therapies CDMO market

Since 2021, CRL increased its focus on CG&T

- ➔ **Entered CDMO space via acquisitions**
2021
Acquired Cognate and Vigen Biosciences with a strategic focus to provide CG&T capabilities
- ➔ **Restructured the business**
2022 - 23
right sized the business post COVID-19 and upgraded facilities
- ➔ **Expanding capabilities**
2023 to present
Added “centres of excellence”
Growing biologic testing solutions service offerings and facilities in the U.S. and Europe

Limited experience in regulatory processes for advanced therapies complicates testing, driving greater reliance on outsourcing.

CRL's Value Proposition

Integrated value chain from foundational cellular materials to testing and production

Consensus keeps CRL's margins flat in the 19-20% range LT term and does not give CRL the benefit of a more efficient cost base as well as recovery in some of its segments

Eliminate ~5% of cost structure by 2026

1. Labor size reduction



6% headcount reduction

2. Footprint Consolidation



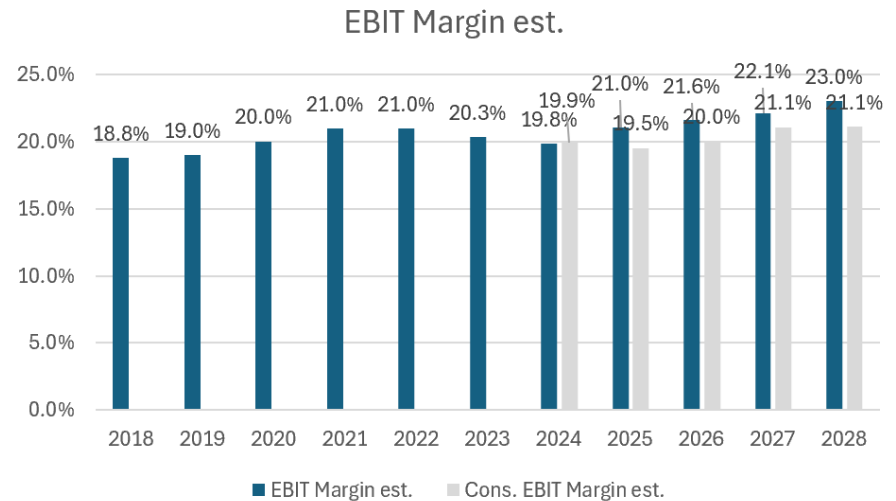
15 small sites consolidated

- **Reduced labor Costs:** CRL has reduced ~1,300 workers or ~6% of its workforce
- **Footprint optimization:** Consolidating ~15 small sites primarily in the DSA and RMS segments

\$200M identified as run-rate cost savings by 2026

- \$40 incremental net savings generation
- Leveraging technology to be more efficient such as Apollo™ platform and RMS e-commerce initiatives to help streamline processes

CRL Company-level Operating Margin



Consensus keeps CRL's margins flat in the 19-20% range LT term and does not give CRL the benefit of a more efficient cost base as well as recovery in some of its segments

Operational leverage driven by RMS and CDMO growth

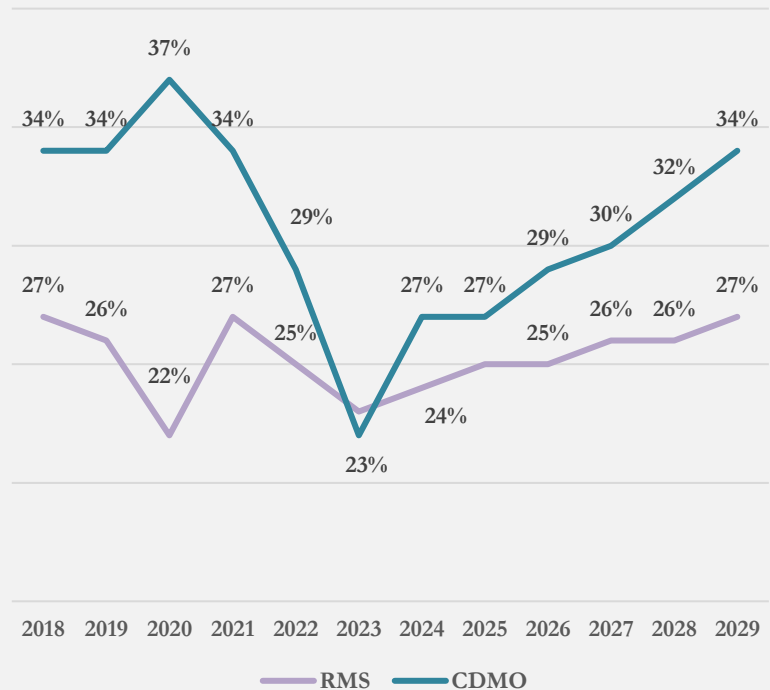
RMS

- Within RMS, CRL recently invested and expanded the footprint of its CRADL® (Charles River Accelerator and Development Lab)
- CRADL offers rentable, turnkey vivarium lab spaces equipped with essential support services to facilitate in vivo research.
- CRADL has been a significant driver of RMS growth but has **impacted RMS margins (hist. upper 20s) but margins should expand with increased utilization post a period of investment.**

CDMO

- In Manufacturing Operations (~19% of business), CRL's **CDMO business (~19% of business) is a higher margin business** because of the inherent complexity of the market
- CRL has gone through a phase of restructuring and investment, but the **margins should work back to ~30% operating margins** (company margin is ~20%)

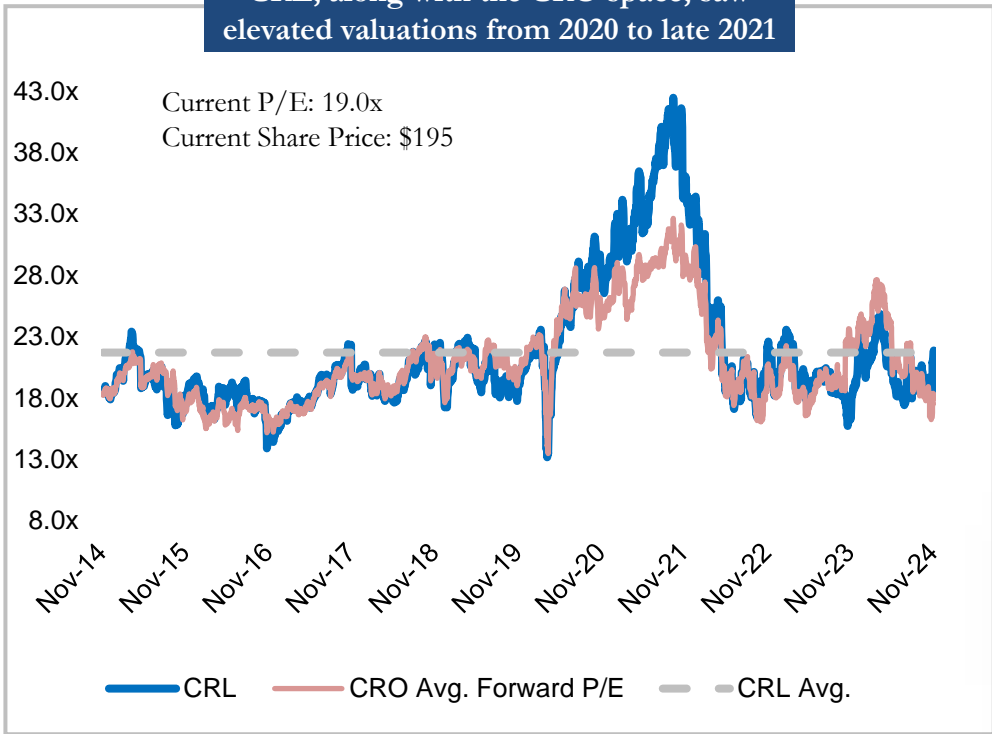
CRL Operating Margin by Business Unit



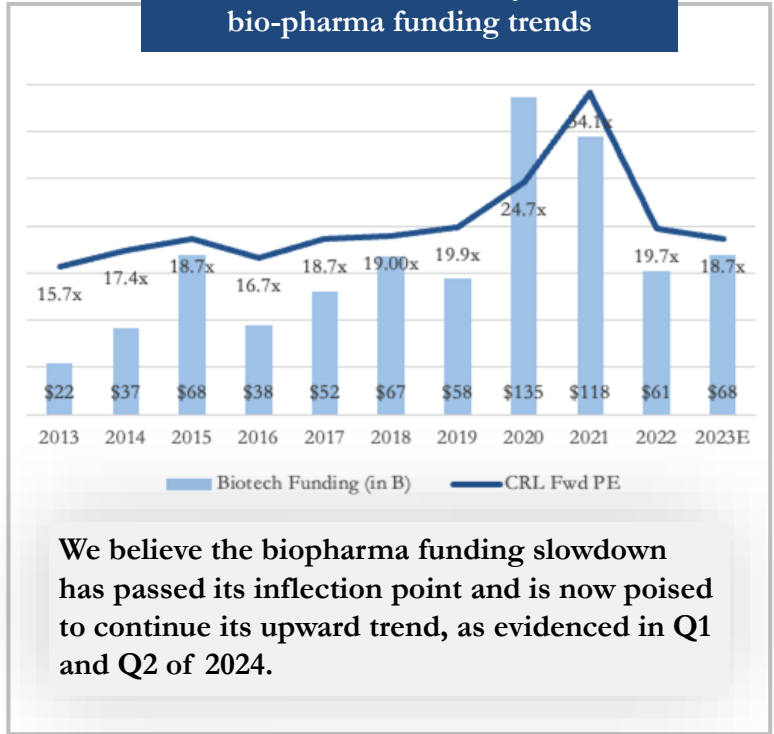
Valuation: The way market sees it today!

CRL's is currently trading at 19x LTM earnings and 11x LTM EBITDA which is below its 10yr average of ~23x earnings

CRL, along with the CRO space, saw elevated valuations from 2020 to late 2021



CRL's valuation has always tracked bio-pharma funding trends





Valuation: CRL presents a low-risk entry point ahead of its return to a long-term growth trajectory

	Historical Financials							Projections					
	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	
Revenue	\$ 2,266	\$ 2,621	\$ 2,924	\$ 3,540	\$ 3,976	\$ 4,129	\$ 4,022	\$ 4,004	\$ 4,200	\$ 4,516	\$ 4,859	\$ 5,231	
RMS	\$ 520	\$ 537	\$ 571	\$ 690	\$ 739	\$ 792	\$ 772	\$ 770	\$ 801	\$ 837	\$ 874	\$ 914	
DSA	\$ 1,317	\$ 1,619	\$ 1,837	\$ 2,107	\$ 2,447	\$ 2,616	\$ 2,548	\$ 2,477	\$ 2,552	\$ 2,730	\$ 2,922	\$ 3,126	
CDMO	\$ 430	\$ 465	\$ 515	\$ 742	\$ 790	\$ 721	\$ 703	\$ 757	\$ 848	\$ 949	\$ 1,063	\$ 1,191	
Revenue Growth		15.7%	11.5%	21.1%	12.3%	3.9%	(2.6%)	(0.5%)	4.9%	7.5%	7.6%	7.6%	
RMS		3.3%	6.3%	20.9%	7.1%	7.2%	(2.6%)	(0.2%)	4.0%	4.5%	4.5%	4.5%	
DSA		22.9%	13.5%	14.7%	16.1%	6.9%	(2.6%)	(2.8%)	3.0%	7.0%	7.0%	7.0%	
CDMO		8.3%	10.8%	44.1%	6.3%	-8.6%	(2.6%)	7.7%	12.0%	12.0%	12.0%	12.0%	
Operating Profit	\$ 498	\$ 585	\$ 743	\$ 835	\$ 838	\$ 813	\$ 838	\$ 838	\$ 904	\$ 1,001	\$ 1,119	\$ 1,208	
<i>OPM</i>	18.8%	19.0%	20.0%	21.0%	21.0%	20.3%	20.2%	20.9%	21.5%	22.2%	23.0%	23.1%	
Operating Margins													
RMS	27%	26%	22%	27%	25%	23%	24.0%	25.0%	25.0%	26.0%	27.0%	27.0%	
DSA	22%	22%	23%	24%	25%	27%	27.0%	27.0%	27.0%	27.0%	27.0%	27.0%	
CDMO	34%	34%	37%	34%	29%	22%	23.0%	26.0%	29.0%	31.0%	34.0%	34.0%	
Overheads	-6.5%	-6.0%	-5.6%	-5.6%	-5.0%	-5.3%	(5.5%)	(5.5%)	(5.5%)	(5.5%)	(5.5%)	(5.5%)	

Net Interest Expense		\$ 59	\$ 86	\$ 72	\$ 59	\$ 132	\$ 119	\$ 108	\$ 101	\$ 96	\$ 89	\$ 89
Other Income / Expense												
Profit Before Taxes	<i>PBTM</i>	\$ 439	\$ 499	\$ 671	\$ 776	\$ 707	\$ 694	\$ 730	\$ 803	\$ 904	\$ 1,030	\$ 1,119
Taxes	<i>Rate</i>	(95)	(96)	(125)	(138)	(157)	(153)	(161)	(177)	(199)	(227)	(246)
		21.6%	19.3%	18.7%	17.7%	22.2%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Net Income	<i>Net Margin</i>	\$ 334	\$ 412	\$ 531	\$ 571	\$ 549	\$ 542	\$ 569	\$ 626	\$ 705	\$ 804	\$ 873
		12.8%	14.1%	15.0%	14.4%	13.3%	13.5%	14.2%	14.9%	15.6%	16.5%	16.7%

DCF Considerations	
Current Price (Nov 22, 2024)	\$195.77
WACC	8.5%
Terminal Value	\$13,349
EBITDA (2029)	1,645
Exit Multiple	12.2x
Enterprise Value	\$16,674
(-) Debt	(1,902)
(+) Cash	2,279
Equity Value	17,139
Share Price	\$335.39
Upside	71%

KEY DRIVERS

- Revenue and Margin by Business Units
 - Research Models and Services (RMS)
 - ✓ Growth: Normalized to ~4%
 - ✓ Margin: CDMO grow
 - Discovery and Safety Assessment (DSA)
 - ✓ Growth: Normalized to 7% from 2026 (fairly below the historical range)
 - ✓ Margin: Stable, in line with current margins
 - Manufacturing Solutions (CDMO)
 - ✓ Growth: Reinstate LDD growth rates
 - ✓ Margin: operational leverage with new revenue growth
- Operating Margin: Expected to hit 23% in 2028E
- Terminal Value: Conservative Exit Multiple (12.2x EBIDTA – same as LTM multiple)

Risks & Catalysts

Risks

	Risks	Mitigants
<p>Inflation Reduction Act Potential for lower industry R&D spend</p>	<p>Potential for lower R&D spend due to price negotiation for certain drugs.</p> <ul style="list-style-type: none"> • Biologics are spared from price negotiations for 13 years following approval vs 9 years for small molecules, making pharma prioritize biologics 	<ul style="list-style-type: none"> • Negotiated prices apply only to Medicare, not investment in therapies for diseases in the young. • EPIC act aims to equalize grace period as small molecules are crucial for innovation and cost savings
<p>Biotech Funding/Pharma Spend Short-term funding lower than expected & switch from clinical to preclinical spending takes longer than expected</p>	<p>Demand is slowing, as CRL's DSA backlog declined sequentially from its high of \$3.2B in 3Q22 to \$2.8B in 2Q23.</p> <ul style="list-style-type: none"> • Similar to biotech funding, pharma funding seems to be muted with pharma also prioritizing clinical assets vs preclinical 	<ul style="list-style-type: none"> • Biotech funding should strengthen as interest rates lower • Refocus of pharma from late stage to preclinical
<p>Lower DSA growth could impact future growth</p>	<ul style="list-style-type: none"> • DSA is ~60% of CRL business (SA is ~80% of DSA) • Safety Assessment outsourcing growth is slowing with penetration at ~60% 	<ul style="list-style-type: none"> • DSA slowdown is overstated. DSA segment has posted above consensus growth • Continues to grow with increased discovery outsourcing. (~25% penetration) and biologics exposure with CDMO

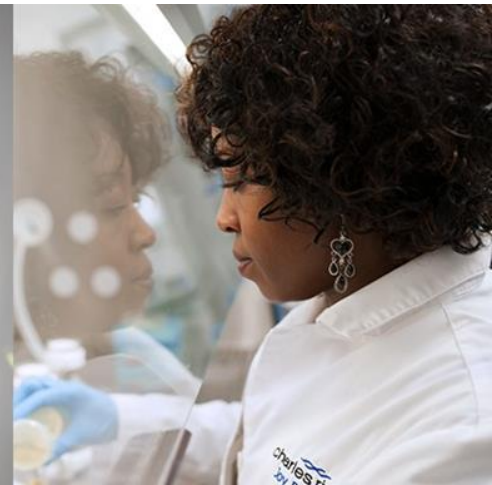
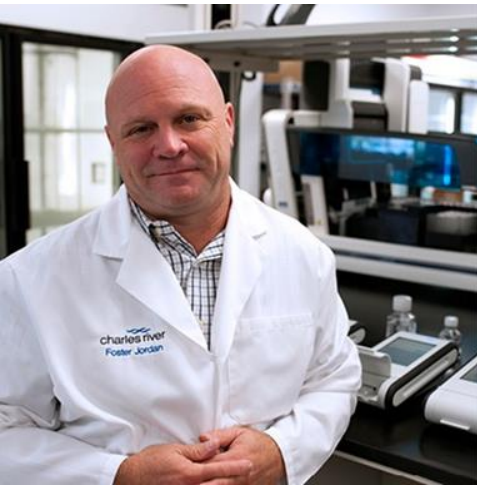
Catalysts

<p>Confidence in future Earnings beat</p>	<p>CRL's Q3 results, and management commentary and outlook give us comfort that earnings downgrades have stabilized and CRL's headwinds are mostly priced in. We expect the macro environment to recover</p>
<p>Positioning as a "One-Stop Shop"</p>	<p>CRL has strengthened its position in Discovery (acquisition of Retrogenix, distributed bio) and Manufacturing solutions (CDMO acquisitions) and could leverage its platform to provide end-to-end solutions to pharma</p>
<p>BIOSECURE Act</p>	<p>The BIOSECURE Act (H.R. 7085), introduced in 2024, aims to restrict U.S. government contracts with certain foreign biotech firms, particularly those linked to China. This legislation benefits CRL by increasing demand for its domestic services as government and private sector contracts shift away from foreign providers, thus capturing a larger market share</p>

APPENDIX


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Contributing to the Search for Healthier Lives™



Appendix I: DCF Assumptions

Period ended (\$ thousands)	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e	2028e
Research Models and Services (RMS)	\$519,682	\$537,089	\$571,152	\$690,437	\$739,175	\$792,343	\$825,072	\$823,246	\$856,176	\$894,703	\$934,965
<i>growth yoy</i>		3.3%	6.3%	20.9%	7.1%	7.2%	(2.6%)	(0.2%)	4.0%	4.5%	4.5%
Discovery and Safety Assessment (DSA)	\$1,316,854	\$1,618,995	\$1,837,428	\$2,107,231	\$2,447,316	\$2,615,623	\$2,425,408	\$2,358,973	\$2,429,973	\$2,600,071	\$2,782,076
<i>growth yoy</i>		22.9%	13.5%	14.7%	16.1%	6.9%	(2.6%)	(2.7%)	3.0%	7.0%	7.0%
Manufacturing Solutions (Manufacturing)	\$429,560	\$465,142	\$515,353	\$742,492	\$789,569	\$721,443	\$773,016	\$832,863	\$932,807	\$1,044,743	\$1,170,112
<i>growth yoy</i>		8.3%	10.8%	44.1%	6.3%	(8.6%)	(2.6%)	7.7%	12.0%	12.0%	12.0%
Total revenue	\$2,266,096	\$2,621,226	\$2,923,933	\$3,540,160	\$3,976,060	\$4,129,409	\$4,023,495	\$4,015,081	\$4,218,955	\$4,539,518	\$4,887,154
<i>growth yoy</i>		15.7%	11.5%	21.1%	12.3%	3.9%	(2.6%)	(0.2%)	5.1%	7.6%	7.7%
Period ended (\$ thousands)	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e	2028e
Research Models and Services (RMS)	140,013	140,643	125,482	188,501	186,011	182,629	194,275	201,736	218,367	235,992	257,115
<i>% margin</i>	27%	26%	22%	27%	25%	23%	24%	25%	26%	26%	28%
Discovery and Safety Assessment (DSA)	285,464	356,561	430,651	499,206	618,350	718,172	631,149	625,226	643,982	689,060	744,514
<i>% margin</i>	22%	22%	23%	24%	25%	27%	26%	27%	27%	27%	27%
Manufacturing Solutions (Manufacturing)	146,745	157,801	192,564	254,210	227,446	157,511	210,142	237,473	279,842	329,229	392,138
<i>% margin</i>	34%	34%	37%	34%	29%	22%	27%	29%	30%	32%	34%
Unallocated Corporate Overhead	(147,280)	(157,807)	(163,684)	(199,854)	(197,839)	(219,499)	(237,964)	(220,829)	(232,043)	(249,674)	(268,793)
Operating income (loss)	424,941	497,198	585,013	742,063	833,968	838,813	797,602	843,606	910,149	1,004,608	1,124,975
Operating margin	18.8%	19.0%	20.0%	21.0%	21.0%	20.3%	19.8%	21.0%	21.6%	22.1%	23.0%

Appendix 2: Company Management and Strategy

Charles River Laboratories is led by a team of industry veterans and has a favorable capital allocation policy

Management profiles and incentives

- CEO: James C. Foster - 74 years old
 - Started his career at CRL in 1976 as General Counsel
 - Named CEO and President in 1992 and Chairman in 2000
 - Expanded CRL's revenues as CEO from approximately \$160 million to >\$4B
 - Since CRL's IPO in June 2000, stock price has appreciated at a CAGR of >10%
- CFO: Flavia H. Pease - 52 years old
 - Named CFO in 2022
 - >20 years in financial leadership roles at J&J, most recently serving as VP and Group CFO of J&J's global Medical Devices business



Minimum stock ownership requirements for officers ensures interests align with business:

- CEO: 6X base salary
- Direct reports to CEO: 3X base salary

STIP drivers: Revenue, EBITDA, op. margin, FCF
LTIP drivers: TSR growth, ROIC, Cumm. revenue growth, EPS growth, organic revenue growth

Capital allocation priorities

Key capital allocation priorities include:

- **Strong FCF generation is a key strength of CRL** - Avg FCF margin of ~12.4% over the past 5 years
- **Disciplined approach to M&A and Partnerships** - CRL has pursued bolt-on acquisitions to add key expertise and high growth exposure
- Joint ventures that allow access to innovative capabilities and cutting-edge or nascent technologies
- **Target leverage below 2.5x Net debt/ EBITDA**
- **Broad strategy to return capital.** Recently approved buyback authorization of \$1B

Invested over \$3.3B in the last 5 years

- Jan-23 | **SAMDI Tech (\$60M)**
 - Provider of label-free high-throughput (HTS) solutions for drug discovery
- Apr-22 | **Explora BioLabs (\$284M)**
 - Provider of contract vivarium research and related services to efficiently conduct early-stage research activities
- Jun-21 | **Vigene Biosciences (\$324M)**
 - A **gene therapy CDMO**, providing viral vector-based gene delivery solutions to conduct testing, process development and manufacturing
- Mar-21 | **Cognate Bioservices (\$878M)**
 - A cell and **gene therapy CDMO** with capabilities in manufacturing cell therapies and plasmid DNA. Located in Memphis, TN.

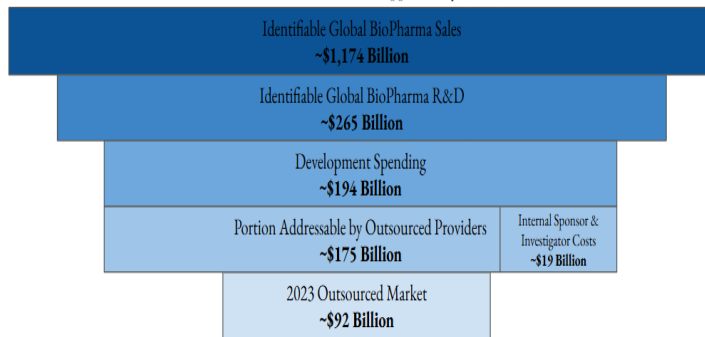
Appendix 3: Industry Overview

An overview of the competitive landscape and the industry

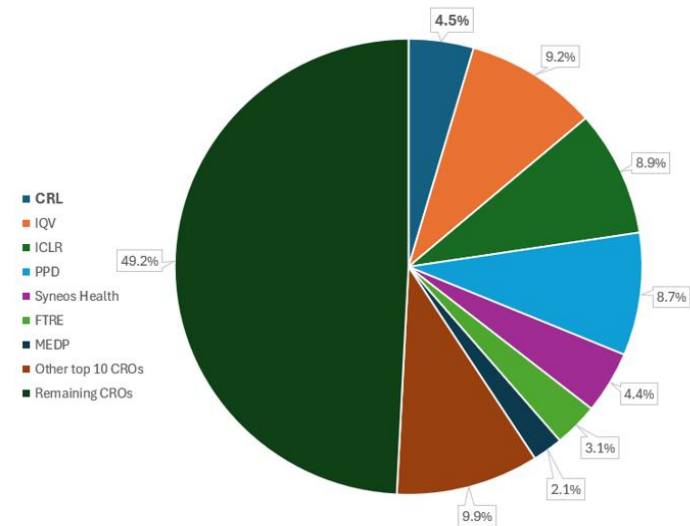
Global CRO Industry

- 2023 CRO market size ~\$92B. **Expected growth of 6.5% CAGR over next five years**
- CRL is a Top 10 preclinical CRO focused on providing comprehensive preclinical support

BioPharma Sales to CRO Opportunity (2023)



2023 Market Share Amongst the Top 10 CROs



Market Dynamics

- Biotech funding is **increasing and is up 23% YOY (TTM) (~\$6B/month)**
- Biopharma revenue in 2023 ~\$1.17T. Projected to grow at **6.3% CAGR through 2028**
- CRO market projected to grow at **CAGR of 6.5% over next five years**
- C> is a **key market** CRL is positioned to capture (20% CAGR since 2014).



ALPHA  **CHALLENGE**
Kenan-Flagler Business School
The University of North Carolina

December 5, 2024

Team Number: 8

Students: Ashley Johnson, Chidinma Okoro, Muskan Uprety

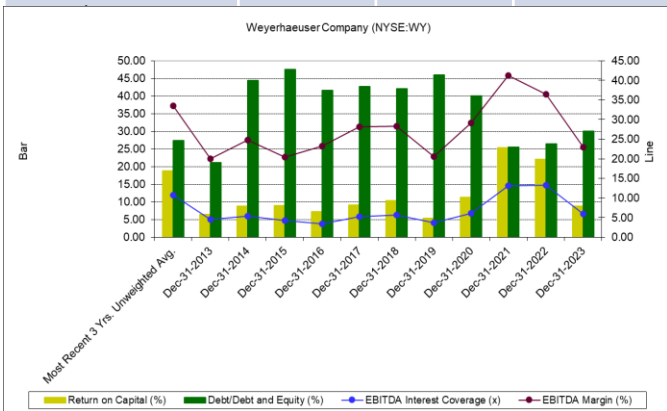


Financial Overview

11/21/24

Source: FactSet and Capital IQ

Current Price	\$30.62	52W H/L	\$26.73/ \$36.27
Market Cap (\$M)	\$22,394	EV (\$M)	\$26,960
LTM Revenue	\$7,190	LTM EBITDA	\$1,770
'24YTD EPS	\$0.79	Debt/ Equity	4.89%
'23 EPS	\$1.15		



Source: Capital IQ

Company Details

The company went public in 1963, but not as a REIT. The company elected REIT status in 2010 (taxable subsidiaries include wood products). A merger in 2016 with Plum Creek included 13 million acres and 38 wood products facilities. Company Includes: 10.5 million acres of land, 19 lumber mills, 6 OSB mills, 6 engineered wood mills, 3 veneer/plywood mills, 1 fiberboard mill and 19 distribution centers. Focus in the last few years has been operational efficiencies, innovation/automation and purchasing woodland.

Investment Thesis

Target Price: \$40 (31% upside)

1. The company's trading price is lower than the value of its raw land holdings.
2. The most difficult period of this lumber cycle is over, and WY is poised for growth.
3. The US lumber industry benefits from tariffs, which were increased in August 2024.

The company is valued at \$22.4 billion based on 11/21/24 share price of \$30.62. This is approximately \$2,259 per fee acre. **WOULD YOU INVEST IN BARE LAND AT \$2,259 per acre?** This doesn't include income from timber crop, income from leasing, wood product revenue. The value isn't predicated on tenants, management, or even improvements. This is raw land.

Sawmills and wood production is a thin margin business and that has not performed well since peaking during the pandemic when prices rapidly increased. But **the market has likely hit the bottom and will recover next year.** Many mills have closed as a result of record low lumber demand and prices. WY is large, has reserves and can profit on other's failures. Vertical integration and innovation have positively impacted margins. WY has the highest profit margin in the industry in 2024 (IBISWorld).

The lumber industry benefits from tariffs and the largest competitor is Canada. Antidumping tariffs are in place on Canadian softwood lumber (14.54%, doubled in Aug. 2024). The company would benefit from tariffs raised back to levels they were in 2017-2020 (20-24%). The rate is annually reviewed by USDC and could double again in 2025.

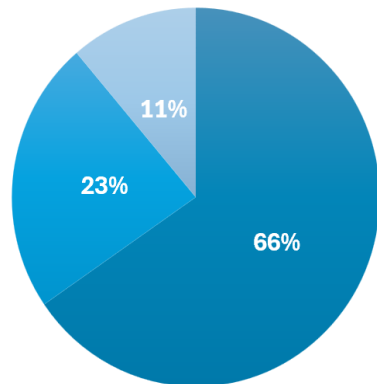
Investment Thesis 1: *The company's trading price is lower than the value of its raw land holdings*

The company is valued at \$22.4 billion based on 11/21/24 share price of \$30.62

This is approximately **\$2,259 per acre** assuming 9.884 million acres. This only includes fee owned raw land. Not standing timber, mills, production, equipment, Wood products, etc.

Current pasture land values as reported by USDA are to the right. **This indicates \$3,355 per acre or \$45.47 per share; \$2,842 per acre or \$38.51 per share with debt.**

WY Timberland Holdings



■ US South ■ US West ■ US Northeast

	Summary of 2023 Timberland Ownership			Published Land Values	
	Fee AC (thousands)^	Long-term Contract^	Total AC (thousands)^	USDA Pasture Land 2024** Per AC	Total Value (thousands)
US West					
Oregon	1,418		1,418	\$1,050	\$1,488,900
Washington	1,120		1,120	\$940	\$1,052,800
Subtotal	2,538	-	2,538		\$2,541,700
US South					
Alabama*	523	172	695	\$3,330	\$1,742,589
Arkansas	1,186	18	1,204	\$3,270	\$3,878,220
Florida	211	61	272	\$7,100	\$1,498,100
Georgia	579	46	625	\$4,700	\$2,721,300
Louisiana	1,005	354	1,359	\$3,360	\$3,376,800
Mississippi	1,152	36	1,188	\$3,120	\$3,594,240
North Carolina	665		665	\$5,810	\$3,863,650
Oklahoma	487		487	\$2,000	\$974,000
South Carolina	213		213	\$4,150	\$883,950
Texas	12	2	14	\$2,200	\$26,400
Virginia	118		118	\$5,090	\$600,620
Subtotal	6,151	689	6,840		\$23,159,869
US North					
Maine	833		833	\$7,310	\$6,089,230
New Hampshire	24		24	\$7,310	\$175,440
Vermont	86		86	\$7,310	\$628,660
West Virginia	252		252	\$2,250	\$567,000
Subtotal	1,195	-	1,195		\$7,460,330
Total	9,884	689	10,573		\$33,161,899

**Source: Publication | Agricultural Land Values | ID: pn89d6567 | USDA Economics, Statistics and Market Information System

Source: 2023 Annual Report^

*Added 7/2024 purchase of 84,300 AC

Disclaimer: This is not an appraisal. For educational use in Alpha Challenge competition only.

Indications	Price/Fee AC	Price/Share
Land Value - Current Price	\$2,259.36	\$30.62
Land Value - USDA	\$3,355.01	\$45.47
Land Value - USDA less Debt	\$2,841.77	\$38.51
Land Value/AC- latest Acquisition	\$2,657.18	\$36.01

Disclaimer: This is not an appraisal. For educational use in Alpha Challenge competition only.

Investment Thesis 1: *The company's trading price is lower than the value of its raw land holdings*

Modified Net Asset Valuation

Market Value - Land	\$	33,161,899,000
Less Conservation Easements	\$	(1,006,502,200)
Timber [^]	\$	5,301,305,330
Buildings	\$	1,222,000,000
Equipment	\$	4,005,000,000
Roads	\$	760,000,000
Cash	\$	877,000,000
Total Assets	\$	44,320,702,130
Less Long-Term Debt	\$	(5,073,000,000)
Less Other Liabilities	\$	(1,668,000,000)
Equity Value	\$	37,579,702,130
Fully Diluted Shares	\$	729,335,000
Share Price		\$51.53

Notes:

*WY reports ~3 million acres available for conservation, but they sell this as a turn-key product. The revenue from project management likely exceeds the loss in value due to detrimental easements in place, but 10% is deducted for legal and administrative fees to return the asset to fee simple interest if sold.

[^]WY does not report a timber or tree value. They report the timber and timberlands at cost less depreciation. (Annual Report, 2023). The value included above was calculated as reported in Timber Estimate Table.

-All other inputs sourced from balance sheet - 2023 WY Annual Report
-Intangibles are not added, but may be present due to long-term leases in place. Lease details were not publicly available.

Disclaimer: This is not an appraisal. For use in educational Alpha Challenge competition only.

Timber Estimate

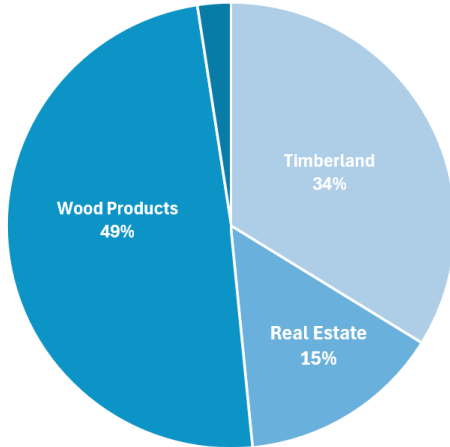
	Fee AC (thousands) ^A	Percent Harvested	Sales	Segment
2023		Harvested	AC (\$millions)	Earnings/ Revenue (\$millions)
US West Land	2,538	2%	50.76	794
US South	6,151	3%	184.54	643
US North	1195	1%	11.95	48
Total	9,884.30	2.50%	247.25	189.4
Segment Net Contribution to Earnings (millions) ^A		211		Earnings, Total Harvest
Segment Net Contribution to Revenue(millions) ^A		1654		Adjust for Maturity (70%)
Segment Earnings/Revenue		12.76%		

Sources: <https://investor.weyerhaeuser.com/download/2023+Annual+Report+and+10K.pdf>

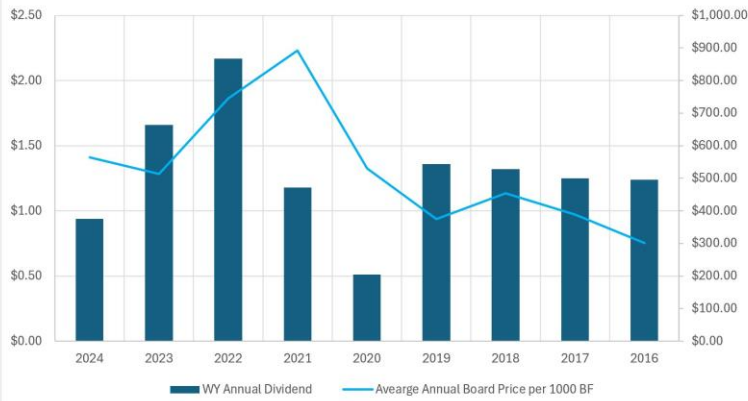
^A<https://investor.weyerhaeuser.com/download/WY+Q4+2023+Earnings+Financial+Package.pdf>

Investment Thesis 2: The most difficult period of this lumber cycle is over, and WY is poised for growth

Segment Net Contributions to Earnings



Annual Dividend and Board Price of 1,000 Board Feet



Sources: WY Investor Website, <https://investor.weyerhaeuser.com/dividend-information>, Accessed November 13, 2024
Business Insider, (March 12, 2024), Monthly price of Lumber in the United States from January 2015 to February 2024 (in U.S. dollars per thousand board feet) (Graph).
In Statista, Retrieved November 13, 2024, from <https://www.statista.com/statistics/1239729/monthly-lumber-price-usa/>

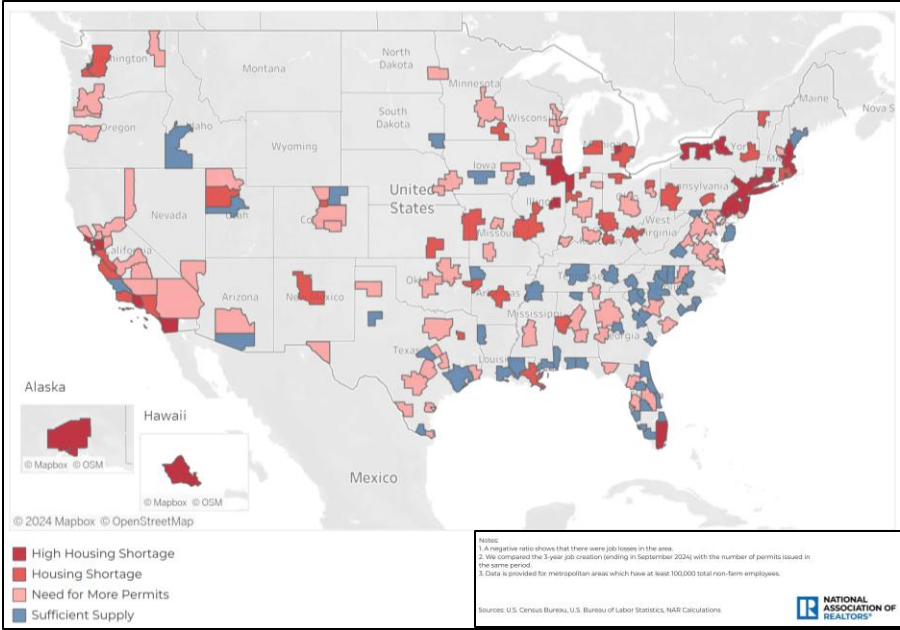
Revenue		Customer
Timberland	Harvest and Haul Delivered/Raw Materials	Sawmills 22% internal log sales FY 2023
Real Estate	HBU Considerations Subdivision Development	Real Estate Investors/Users
Energy and Natural Resources	Leasing/Royalty for Natural Gas, Mining, Aggregates, Alternatives	Natural Resource Companies
Wood Products	Lumber (40%)*, Panels Engineered Wood (19%)*, OSB (34%)*, Integrated Supply Chain/Distribution (7%)*, Purchase decision software	Building Supply Retailers <u>End Market:</u> * SFR/Multifamily (67%) Repair/Remodel (17%) Non-Residential Construction (16%)
Carbon Platform	Leasing/contracts for wind, solar, carbon capture, conservation, mitigation	Public and Private Companies, Municipalities

^2023 Factbook

<https://investor.weyerhaeuser.com/download/2023+Weyerhaeuser+Fact+Book+Performance+Highlights.pdf>

*https://investor.weyerhaeuser.com/download/WY+IR+March+2024+Deck_Final.pdf

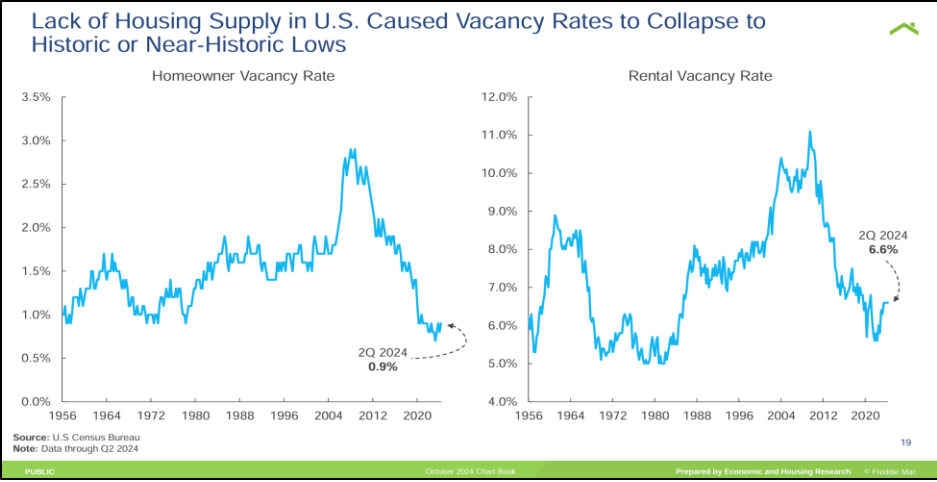
Investment Thesis 2: The most difficult period of this lumber cycle is over, and WY is poised for growth



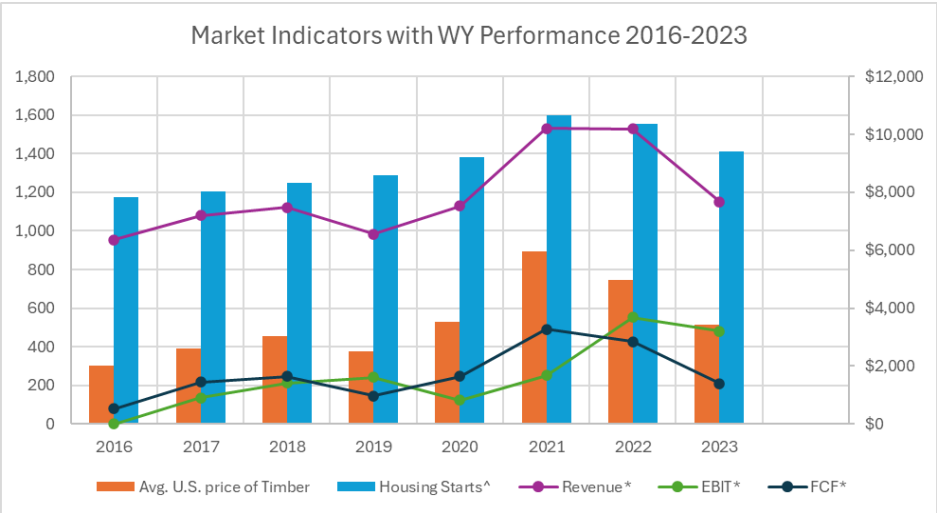
"The **Housing Shortage Tracker** computes how many permits are issued for every new job in 172 metropolitan areas."

Historical averages suggest 1 permit for every 2 jobs creates sufficient supply. Areas with a permit issued for every 2 new jobs or more are considered sufficient (blue). Areas with less one permit for every 2 jobs are red.

[Housing Shortage Tracker](#); September 2024



Source: Freddie Mac [October Outlook_EHR_ChartBook.pdf](#)



Investment Thesis 2: The most difficult period of this lumber cycle is over, and WY is poised for growth

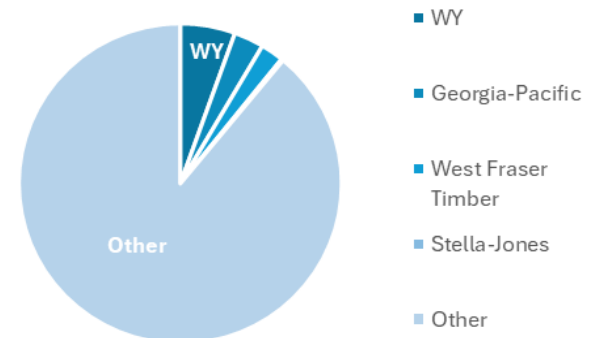
Weyerhaeuser Position - STRONG

- Heavy focus on operating efficiencies and margin growth the past two years
- Wood products located in housing markets
- Company is expanding exports from South market to India, Pakistan and other global markets
- Managed forests with 100+ years management in some cases
- Climate Solutions just taking off
- 11/18/24 announcement of \$500 million to build a new TimberStrand facility in Arkansas
- HBU Land Development (Residential and Industrial)
- 0.877-1.16 billion in cash LTM

Weyerhaeuser Company (WY)										
Comps Tables										
Company										
Name	Ticker	Type	Mkt Cap (M)	Price	EV (M)	EV (M)	P/AFFO	EBITDA Margin (%)		
							NTM (x)	P/NAV (x)		Actual
PotlatchDeltic	PCH-US	REIT/WP	3,427.0	43.09	4,378.9	4,378.9	26.52x	0.78x		23.9%
Farmland Partner	FPI-US	REIT	620.2	12.55	1,103.6	1,103.6	63.31x	0.78x		54.7%
Rural Funds Grp	RFF-AU	REIT/Ag	475.8	1.22	1,000.8	1,000.8	-			48.4%
Gladstone Land	LAND-US	REIT	436.0	12.05	1,371.7	1,371.7	22.60x	0.77x		78.0%
Rayonier	RYN-US	REIT/Log	4,715.7	31.05	6,120.3	6,120.3	29.18x	0.86x		68.4%
BlueLinx	BXC-US	WP	1,096.3	127.53	1,158.6	1,158.6	-			4.6%
Boise Cascade	BCC-US	WP	5,577.8	143.78	5,264.8	5,264.8	-			9.8%
Interfor	IFP-CA	WP	705.6	13.71	1,334.7	1,334.7	-			-2.3%
Weyerhaeuser	WY-US	REIT/WP	22,810.5	31.24	27,376.5	27,376.5	28.69x	0.79x		24.6%

Source: FactSet

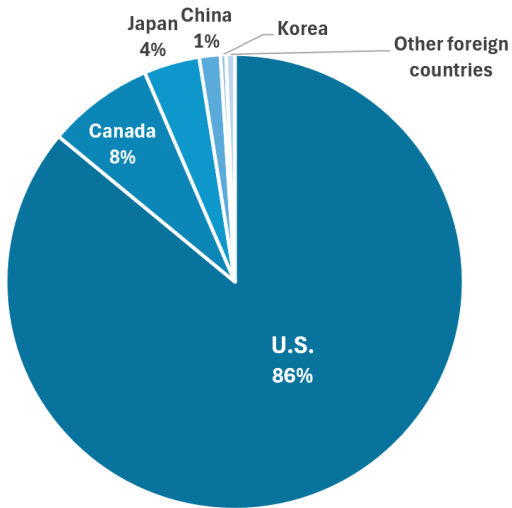
Sawmills & Wood Production in the US



Source: IBIS World

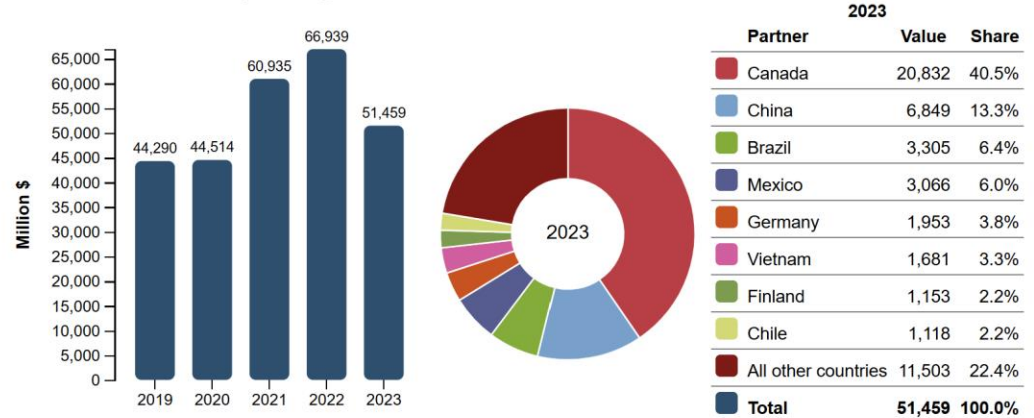
Investment Thesis 3: The US lumber industry benefits from tariffs, which were increased in August 2024

2023 Sales to Unaffiliated Customers



[U.S. Imports by Partner](#) |
 [U.S. Exports by Partner](#) |
 [Top 10 Import Sources](#) |
 [Top 10 Export Markets](#)

Figure FP.1 Forest products: U.S. general imports by selected trading partners, 2019–23
In millions of dollars and percentages



Source: USITC DataWeb/Census, accessed February 16, 2024.
Note: Import values are based on U.S. customs value; export values are based on free alongside ship value, U.S. port of export. Calculations are based on unrounded data.

A majority of WY sales are domestic, and the largest competitor is Canada. The US imposed an anti-dumping duty order on softwood lumber products from Canada. The rate is annually reviewed and was increased from 8.05% to 14.54% (8/24). It was as high as 24% in 2017.

IBISWorld | Wood Product Manufacturing in the US

Sep 2024

International Trade

Total Imports \$3.4bn '19-'24 ↓ 1.9% '24-'29 ↑ 0.1%	Total Exports \$2.2bn '19-'24 ↑ 6.2% '24-'29 ↑ 2.1%	Trade Balance Net Importer ↓ Deficit: \$-1.3bn
--	--	--

IBISWorld | Sawmills & Wood Production in the US

Oct 2024

International Trade

Total Imports \$8.1bn '19-'24 ↑ 2.3% '24-'29 ↑ 0.6%	Total Exports \$3.5bn '19-'24 ↓ 3.2% '24-'29 ↑ 2.3%	Trade Balance Net Importer ↓ Deficit: \$-4.6bn
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Graph Source: 2023 Factbook https://investor.weyerhaeuser.com/download/2023+Weyerhaeuser+Fact+Book_Performance+Highlights.pdf

Chart Source: [Forest Products | United States International Trade Commission](#)

Import Statistics Source: IBIS World

Summary of Methods Used

Comparable Multiples

\$35.01 - \$42.89

Modified Net Asset Valuation

\$51.53

Alternative Valuation Land Only

\$38.51

WY-US																				
Historic and Projected Financials	Dec '19	Dec '20	Growth	Dec '21	Growth	Dec '22	Growth	Dec '23	Growth	Dec '24E - FactSet	Growth	Dec '25E - FactSet	Growth	Dec '25 Proj. Bull ('24E FS)	Growth ('24E FS)	Dec '25 Proj. Base ('24E FS)	Growth ('24E FS)	Dec '25 Proj. Bear ('24E FS)	Growth ('24E FS)	
Sales	6,554	7,532	15%	10,201	35%	10,184	0%	7,674	-25%	7,108	-7%	7,735	9%	8,845	22%	8,270	14%	7,652	7%	
Timberlands	1,618	1,466	-9%	1,636	12%	1,858	14%	1,654	-11%	1,653	0%	1,760	6%	1,950	17%	1,875	12%	1,760	6%	
Wood Products	4,623	5,790	25%	8,221	42%	7,958	-3%	5,657	-29%	5,226	-8%	5,801	11%	6,500	22%	6,000	13%	5,500	5%	
Real Estate / Nat Resources	314	276	-12%	344	25%	368	7%	363	-1%	392	8%	389	-1%	395	1%	395	1%	392	0%	
Other	-1	0		0		0		0		-163		-215	0	0		0		0		
		Margin		Margin		Margin		Margin		Margin		Margin		Margin		Margin		Margin		
Cost of Sales	5,412	83%	5,447	72%	6,103	60%	6,564	64%	5,992	78%	5,452	77%	5,741	74%	6,192	70%	5,789	70%	5,356	70%
EBITDA^	1,276	19%	2,201	29%	4,094	40%	3,654	36%	1,694	22%	1,236	17%	1,601	21%	2,369	27%	2,241	27%	2,096	27%
Timberlands	680	42%	610	42%	693	42%	784	42%	646	39%	536	32%	621	35%	722	37%	694	37%	651	37%
Wood Products	476	10%	1,527	26%	3,357	41%	2,737	34%	905	16%	634	12%	953	16%	1,300	20%	1,200	20%	1,100	20%
Real Estate / Nat Resources	274	87%	241	87%	296	86%	329	89%	320	88%	340	87%	342	88%	348	88%	348	88%	345	88%
Operating Income*	651	10%	1,425	19%	3,643	36%	3,080	30%	1,186	15%	645	9%	1,038	13%	1,769	20%	1,654	20%	1,530	20%
Net Income - GAAP*	-76	-1%	797	11%	2,607	26%	1,880	18%	839	11%	348	5%	582	8%						
Funds From Operations (Gross)^	NR		1,240	16%	NR		NR		1,341	17%	940	13%	1,225	16%	1,504	17%	1,323	16%	1,224	16%
Adjusted FFO														1,254		1,073		974		

*2019-2023 figures from Annual Presentations

^FactSet

Dec '25 Projection-Bull		Multiple	Enterprise Value	Debt	Equity	Price/Share
Sales	\$8,845	4	\$35,380	\$5,073	\$30,307	\$41.55
EBITDA^	\$2,369	15	\$35,537	\$5,073	\$30,464	\$41.77
AFFO	\$1,254	29	\$36,356	\$5,073	\$31,283	\$42.89
Dec '25 Projection-Base		Multiple	Enterprise Value	Debt	Equity	Price/Share
Sales	\$8,270	4	\$33,080	\$5,073	\$28,007	\$38.40
EBITDA^	\$2,241	15	\$33,620	\$5,073	\$28,547	\$39.14
AFFO	\$1,073	29	\$31,123	\$5,073	\$26,050	\$35.72
Dec '25 Projection-Bear		Multiple	Enterprise Value	Debt	Equity	Price/Share
Sales	\$7,652	4	\$30,608	\$5,073	\$25,535	\$35.01
EBITDA^	\$2,096	15	\$31,442	\$5,073	\$26,369	\$36.16
AFFO	\$974	29	\$28,255	\$5,073	\$23,182	\$31.79

Risks and Mitigants

Industry and External Risks

- Competitor recovery of shuttered sawmills and production facilities
- Operational inefficiencies
- Slow integration of recently purchased South land
- Labor shortage

The company has greater liquidity than competitors, allowing swift reaction to potential acquisitions and investments in technology to create operating efficiencies. The company announced a new \$500mm in southern Arkansas, where recent closures of other lumber-related industries left 100s of skilled workers without jobs; WY capitalized on this closure*

*[Weyerhaeuser Company creating hundreds of jobs in southern Arkansas](#), [Weyerhaeuser to invest \\$500M to build new TimberStrand facility in Arkansas](#), [Weyerhaeuser Expanding Engineered Wood Products Portfolio - Nov 18, 2024](#)

Macroeconomic Risks

- Lack of change in housing market
- Insufficient increase in lumber and wood products pricing
- Regulatory

The company has a diverse revenue stream and has better liquidity than peers. The company weathered the past few years of underwhelming wood product and lumber pricing while continuing to invest in woodlands and operating efficiencies. The company reacts swiftly and appropriately in changing market conditions, such as the BC market exit.

Climate Risks

- Natural disaster impacting trees or procession
- Increasing rainy season preventing proper harvest

The company owns assets in various parts of the country, mitigating catastrophic events happening to assets at one time. WY generally cuts 2% of timber stock per year.

[Price History](#)

[Housing Starts Detail](#)

[Industry Projections](#)

[Financial Overview](#)

[Timberland Holdings Map](#)

[Company Overview](#)

[Real Estate, Energy and Natural Resources Map](#)

[Wood Products Portfolio](#)

[Competitive Position](#)

[Sales Volume and Export Revenue](#)

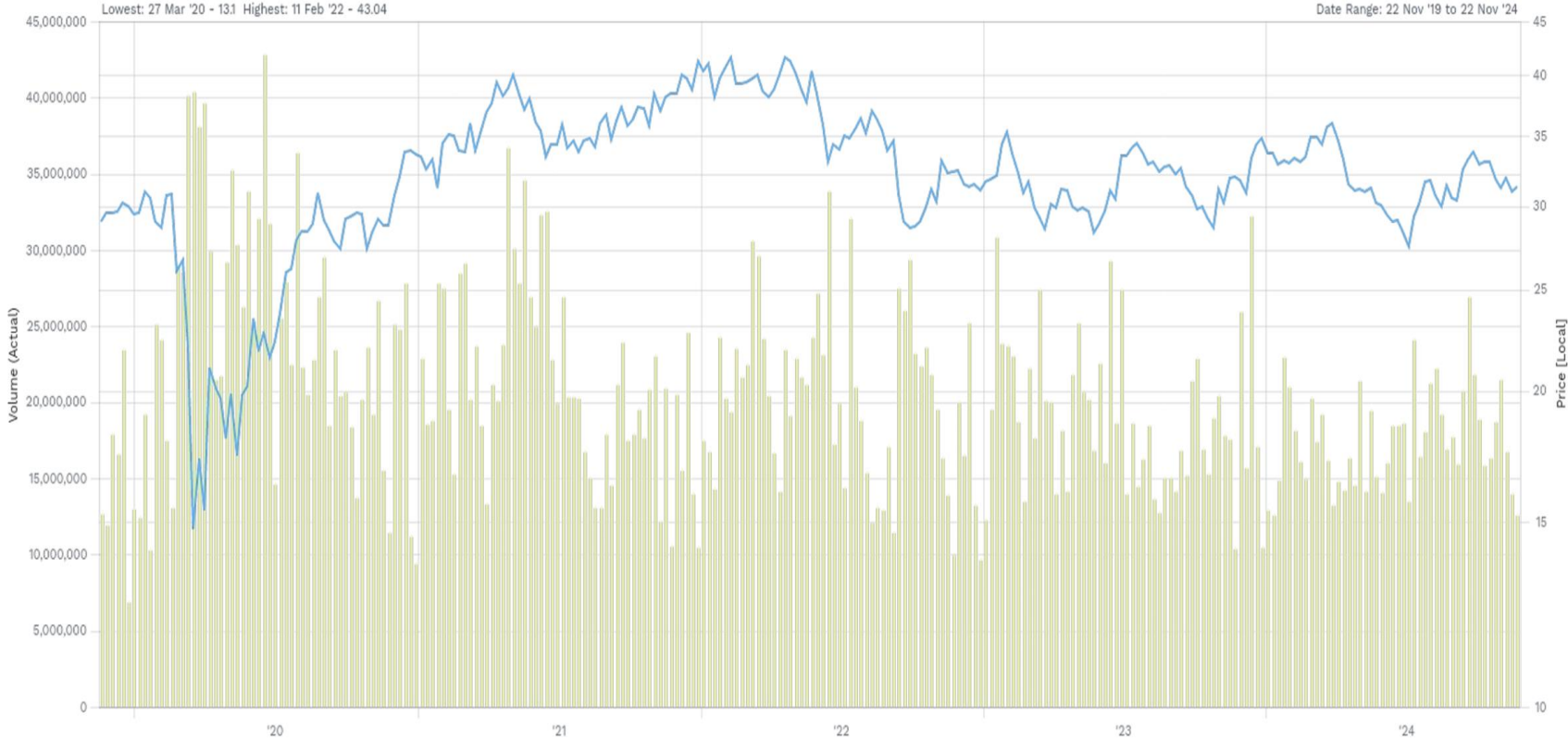
[Standing Gross Timber](#)

[10-K notes on REIT structure](#)

[Real Estate Sales](#)

Price History

Price History: WY-US



Source: FactSet

Housing Starts Detail



Thousands of units	Single Family	2+ units	Total
2021	1,127	474	1,601
2022	1,005	547	1,552
2023	948	472	1,420
2024: 1st quarter (r)	241	80	321
2nd quarter (p)	282	88	370

Thousands of units	Number of units per building of 2+ units				Total
	2 to 4 units	5 to 9 units	10 to 19 units	20 units or more	
2021	12	15	30	417	474
2022	16	32	31	467	546
2023	13	16	31	412	472

	Size of Housing Units			
	Square feet of floor area		Square feet per unit	
	Single Family		2+ Units per building, SF/unit	
	Median	Average	Median	Average
2021	2,303	2,532	1,000	1,040
2022	2,269	2,485	1,009	1,063
2023	2,177	2,409	1,019	1,048

Source: Housing Starts - IBIS World.

Business Environment Profile - E404 Housing starts - MyIBISWorld

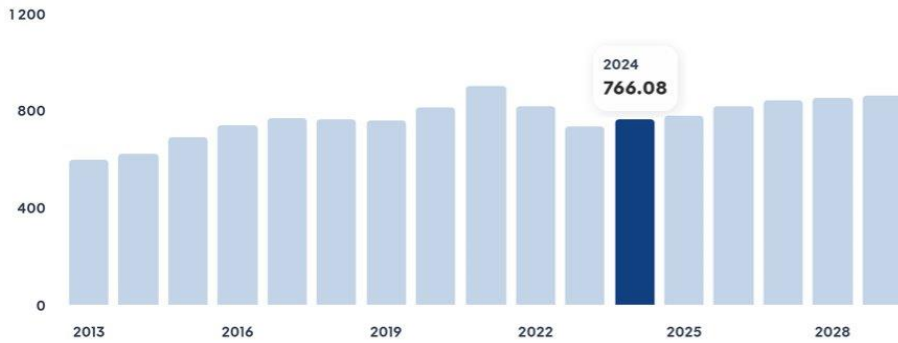
Note: This driver measures the number of new, privately owned housing units started in a given year. This includes both single-unit and multiunit developments. The data is sourced from the US Census Bureau and is the sum of unadjusted monthly data

Source: Other data – US Census NRC - Quarterly Starts and Completions

Industry Projections – IBIS World

Value of residential construction

\$ billion

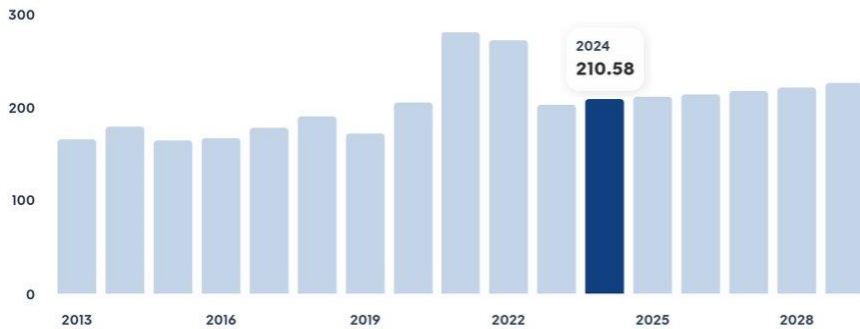


IBISWorld

Source: IBISWorld

Price of sawmill lumber

Index



IBISWorld

Source: IBISWorld

	Industry Projections						
	2024	2025	2026	2027	2028	2029	2030
Projected Change							
Logging (US)							
Establishments %	-0.5	1.5	0.7	0.3	0.1	0.7	0.9
Revenue %	-0.4	4.4	2.1	0.4	-0.3	1.1	1.7
Engineered Wood Manufacturing (US)							
Establishments %	0.6	1.8	0.3	0.9	0.6	0.3	N/A
Revenue %	-0.8	3.8	1.7	0.5	-0.3	1.1	N/A
Wood Paneling Manufacturing (US)							
Establishments %	-1.2	1.7	2	1.2	1.5	1.4	N/A
Revenue %	-3.8	4.2	5.2	2.7	2.8	2.5	N/A

Source: IBIS World

Financial Overview & Market Metrics 11/12/24

Source: FactSet and Capital IQ

LTM Revenue	\$7,190	LTM EBITDA	\$1,234
2023 EPS (\$)	\$1.15	LTM ROA	2.7%
Total Debt/Equity	53.25%	Debt (mm)	5,096
2024 YTD EPS (\$)	\$0.79	Dividend Yield	2.6%
(EBITDA-CAPEX)/Int. Exp	3.3x	3-YR CAGR Dividend Per Share	5.1%

Key Statistics



52 Week Range	\$26.73 - 36.27
Avg Daily Vol (3 Mo)	3,671,250.8
Basic Shares (M)	726.6
Market Cap (M)	22,698
Dividend Yield	2.6%
First Trading Date	21 Jan '72
FD Shares Out (M)	730.2
FD Mkt Cap (M)	22,810
EV (M)	27,376
WACC	7.5%
Float	99.6%
Institutional	88.0%
Top 10 Inst Hldrs	48.1%

Source: FactSet

Company Comp Set

Company Name	TEV/Total Revenues LTM - Latest	TEV/EBITDA LTM - Latest	TEV/EBIT LTM - Latest	P/Diluted EPS Before Extra LTM - Latest	P/TangBV LTM - Latest	NTM TEV/Forward Total Revenue (Capital IQ)	NTM TEV/Forward EBITDA (Capital IQ)	NTM Forward P/E (Capital IQ)
PotlatchDeltic Corporation (NasdaqGS:PCH)	4.0x	29.8x	207.2x	211.0x	1.6x	4.11x	18.05x	74.09x
Louisiana-Pacific Corporation (NYSE:LPX)	2.7x	11.5x	14.3x	19.4x	4.9x	2.64x	13.24x	21.95x
Rayonier Inc. (NYSE:RYN)	5.8x	16.3x	29.5x	27.8x	2.5x	6.95x	17.89x	53.39x
Weyerhaeuser Company (NYSE:WY)	3.7x	21.2x	36.4x	42.3x	2.3x	3.52x	18.22x	44.05x

Source: Capital IQ

WY Timberland Holdings

TIMBERLANDS PORTFOLIO

Superior Holdings Create Value Today and Tomorrow



U.S. WEST
 High-Value Douglas Fir
2.5 MILLION ACRES

- Premium land west of Cascade mountains
- Sawlogs are ~90% of harvest
- Unique Japan export presence



OUR
UNMATCHED SCALE
 MAKES US A
SIGNIFICANT SUPPLIER
 TO MANUFACTURERS IN
EVERY REGION



U.S. NORTH
 Diverse Hardwoods and Softwoods
1 MILLION ACRES

- Premium hardwood sawlogs
- Maximizing value with more than 300 product grades



U.S. SOUTH
 Premium Southern Yellow Pine
7 MILLION ACRES

- Highly productive planted pine forests
- Balanced mix of grade & fiber logs
- Scale operations in every major region

-  **10.5 Million Acres**
Held in the U.S.
-  **14 Million Acres**
Licensed in Canada

Approximate total acres as of December 31, 2023.

WHAT WE DO

Create and Capture Superior Value at Every Step



PROPRIETARY SEEDLINGS
yield superior growth, wood quality and survival characteristics

CUSTOMIZED PLANTING
deploys the best genetic material for each acre on our land base

TARGETED SILVICULTURE
generates superior volume and value in each geography

HEALTHY FORESTS
that are diverse, productive and grown sustainably to financial maturity

HARVEST AND HAUL
efficiency and logistics capabilities for low-cost and reliable operations

DELIVERED LOG MODEL
captures maximum value from each tree using data-driven optimization

OPTIMAL RAW MATERIALS
to maximize mill margins through cost-effective fiber procurement

LOW-COST PRODUCER
that achieves top margin for lumber, panels and engineered wood

DIVERSE CUSTOMER MIX
that fully values our quality, scale, reliability and sustainable practices



PREMIUM LAND SALES
maximizing value from each acre via higher-and-better-use parcels



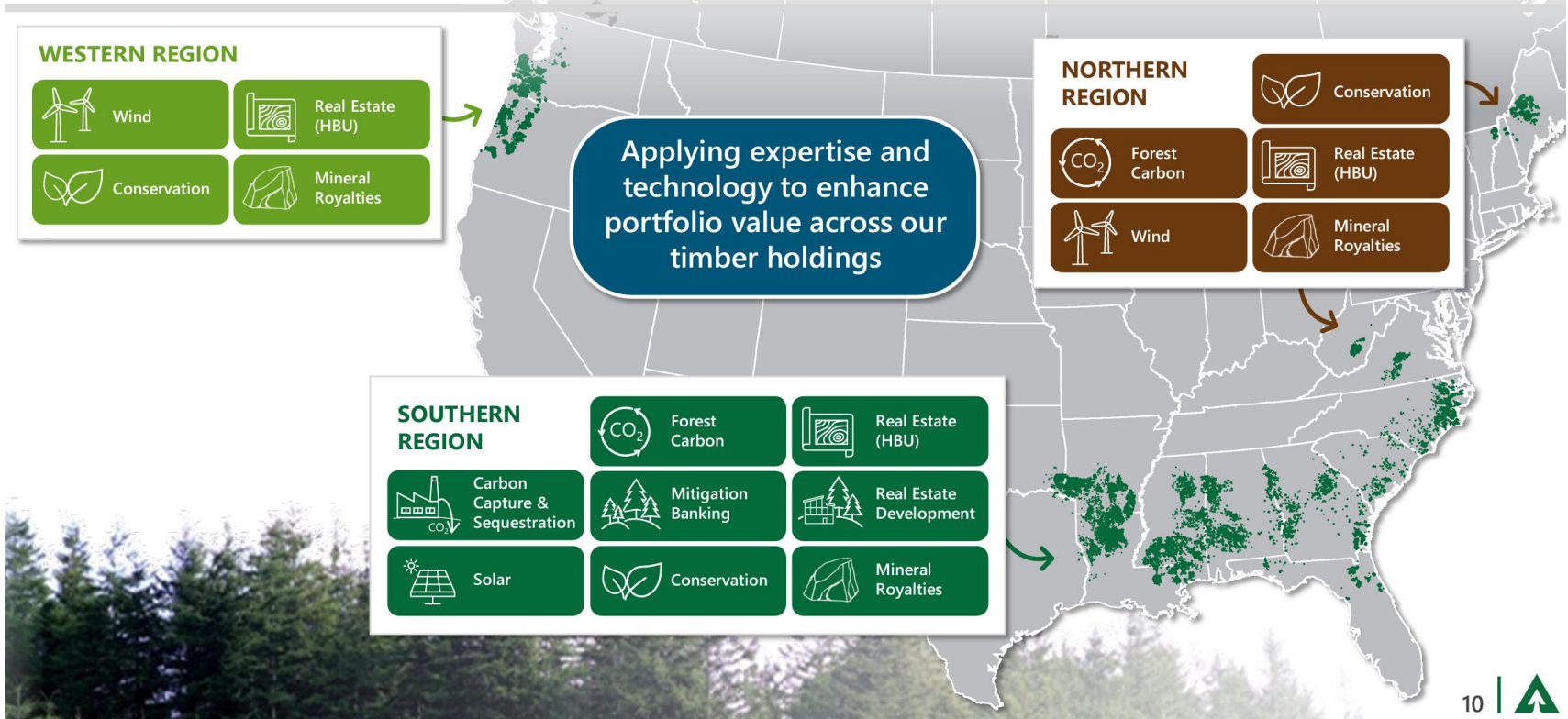
NATURAL CLIMATE SOLUTIONS
maximizing value through wind, solar, carbon, mitigation & conservation



STEADY ROYALTY & LEASE INCOME
maximizing value from surface & subsurface assets

REAL ESTATE, ENERGY & NATURAL RESOURCES

Generating Value Through End-to-End Portfolio Management

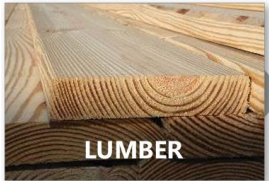


Source: WY Presentation – Raymond James Conference March 2024
https://investor.weyerhaeuser.com/download/WY+RJ+Presentation_2024_Final.pdf

WOOD PRODUCTS PORTFOLIO

Industry-Leading Scale, Diversification and Quality

OUR UNMATCHED ASSETS
+
SUPPLY CHAIN CAPABILITIES
=
PREFERRED SUPPLIER



2nd Largest Producer in North America

- 19 Lumber Mills (5.5 BBF)



4th Largest Producer in North America

- ◆ 6 Oriented Strand Board Mills (3.2 BSF)



#1 Engineered Wood Capacity in North America

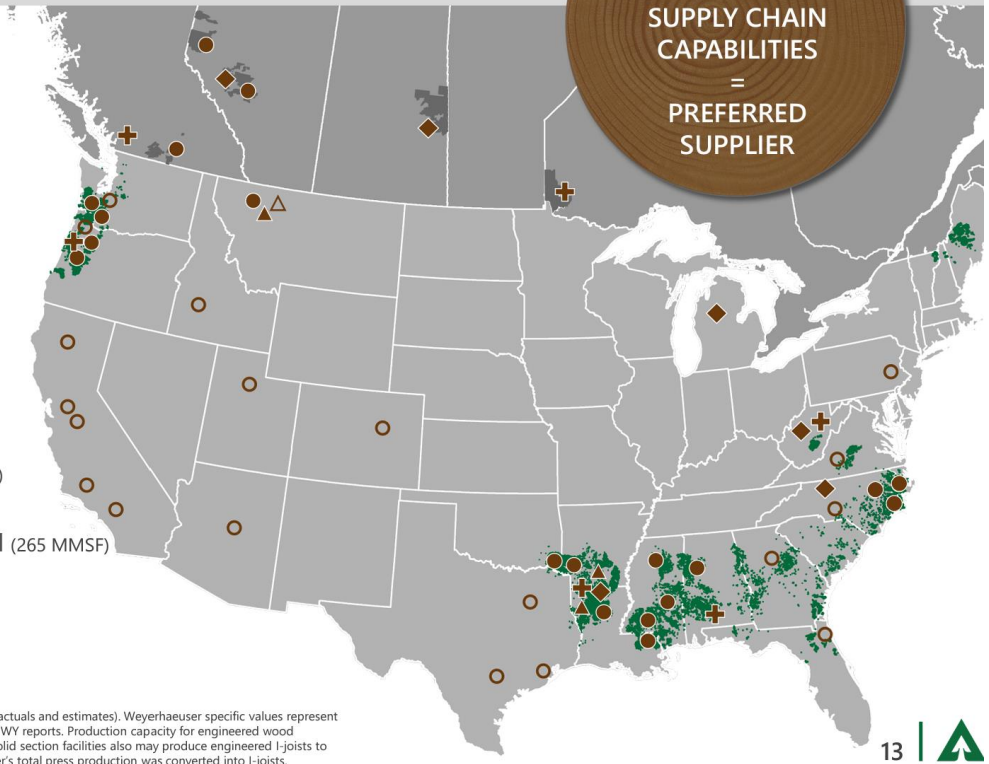
- ✚ 6 Engineered Wood Mills (42 MMCF)
- ▲ 3 Veneer/Plywood Mills (610 MMSF)
- △ 1 Medium Density Fiberboard Mill (265 MMSF)



Located in the Largest Homebuilding Markets

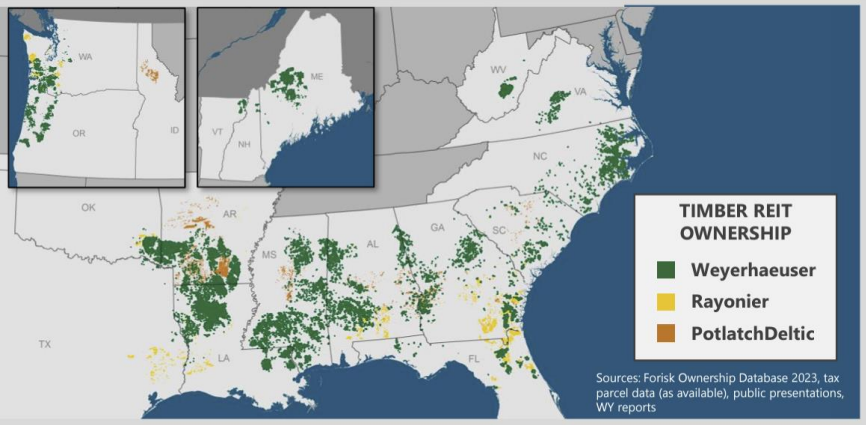
- 19 Distribution Centers

Weyerhaeuser's relative positioning based on full year 2023 production (actuals and estimates). Weyerhaeuser specific values represent capacity by product line as of December 31, 2023. Sources: Public filings, WY reports. Production capacity for engineered wood represents total solid section press capacity. Weyerhaeuser engineered solid section facilities also may produce engineered I-joists to meet market demand. In 2023, approximately 22 percent of Weyerhaeuser's total press production was converted into I-joists.



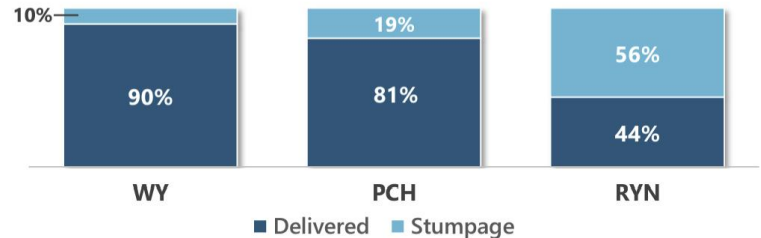
COMPETITIVE POSITION

We Are the Largest Timber REIT



Our Delivered Log Business Model

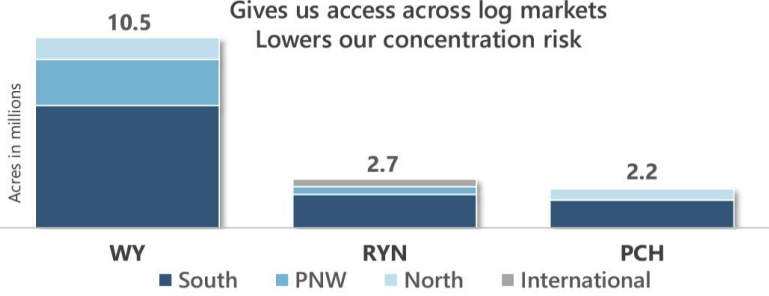
Enables us to capture higher margins



Sources: Public filings, WY reports
Delivered vs. stumpage sales volumes for FY 2023. Excludes New Zealand volumes for RYN.

Our Scale Across All Major Woodbaskets

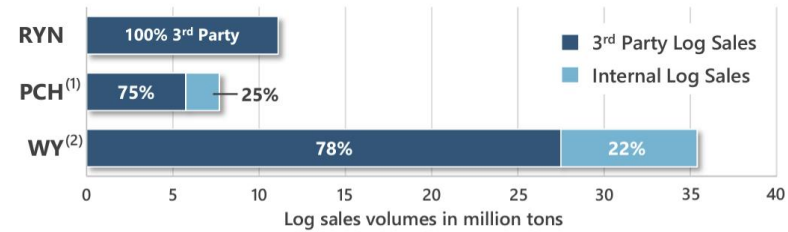
Gives us access across log markets
Lowers our concentration risk



Source: Public filings
Acres as of December 31, 2023.

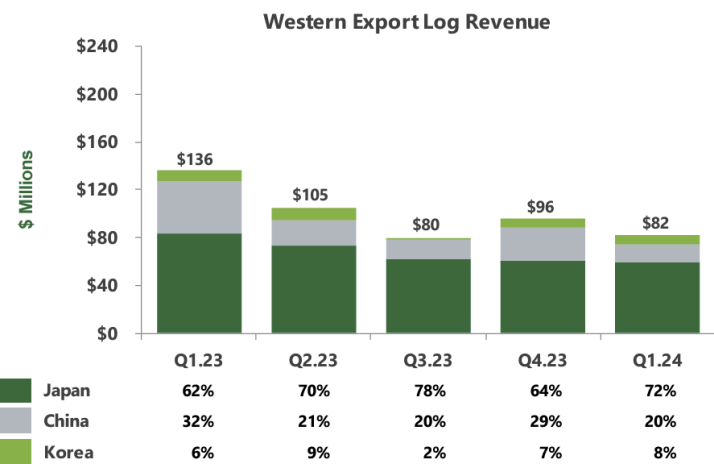
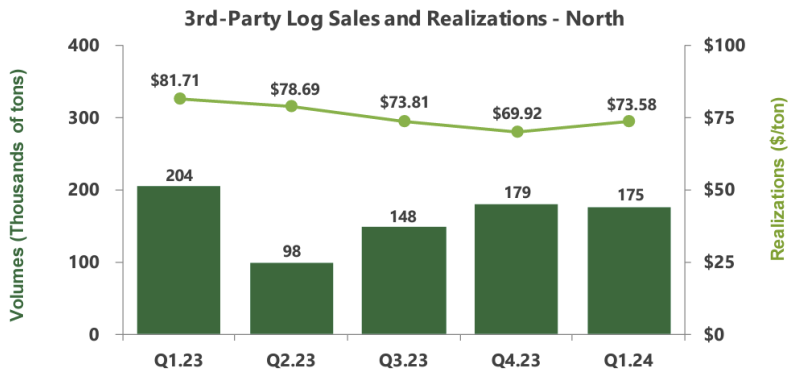
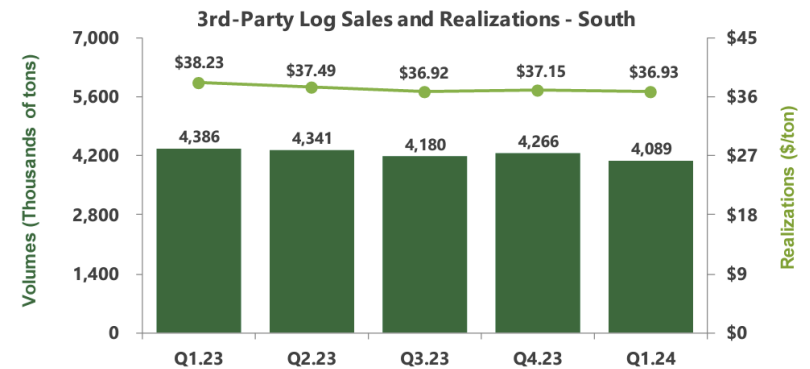
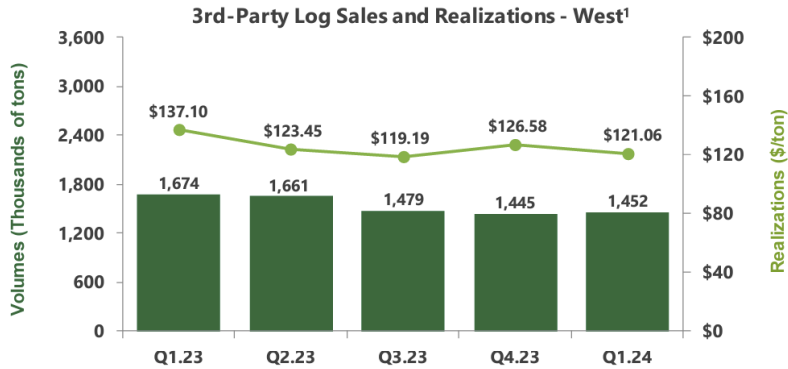
Our Integrated Manufacturing

Allows us to flex volume and maximize overall returns



Sources: Public filings, WY reports
(1) Assumes PCH pulpwood and stumpage reported volumes are sold to third party customers.
(2) Internal vs. third party sales volumes for FY 2023.

SALES VOLUMES, REALIZATIONS AND EXPORT REVENUE



1. Western logs are primarily transacted in MBF but are converted to ton equivalents for external reporting purposes.

Source: WY May 2024 Investor Presentation

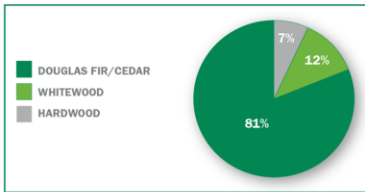
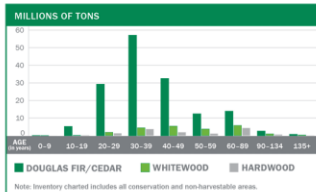
https://investor.weyerhaeuser.com/download/WY+IR+May+2024+Deck_Final.pdf

STANDING GROSS TIMBER INVENTORY INFORMATION

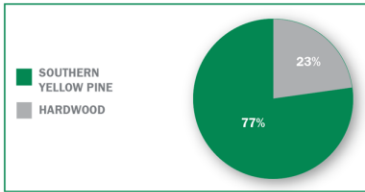
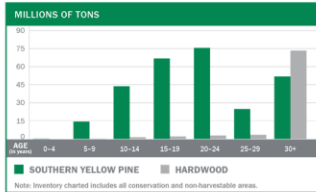
United States

TOTAL INVENTORY AT DECEMBER 31, 2023 ⁽¹⁾		
GEOGRAPHIC AREA		MILLIONS OF TONS
West	Douglas fir/Cedar	154
	Whitewood	23
	Hardwood	13
South	Southern yellow pine	277
	Hardwood	83
North	Conifer	17
	Hardwood	27
Total U.S.		594

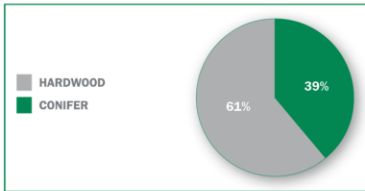
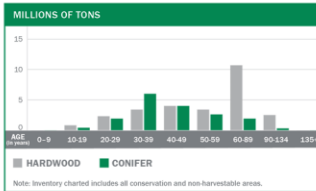
2023 Western U.S. Inventory: By Age and Species



2023 Southern U.S. Inventory: By Age and Species



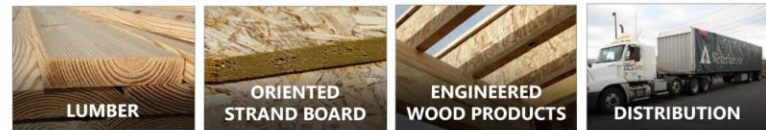
2023 Northern U.S. Inventory: By Age and Species



(1) Inventory includes all conservation and non-harvestable areas.

OUR WOOD PRODUCTS

PRODUCTS	HOW THEY'RE USED
Structural lumber	Structural framing for new residential, repair and remodel, treated applications, industrial and commercial structures, as well as other lumber specialty products.
Engineered wood products	Structural elements for residential, multi-family and commercial structures such as floor and roof joists, headers, beams, subflooring and sheathing.
Solid section	<p>Laminated Veneer Lumber — Microllam® Beams and headers, I-joist flanges, concrete forming, scaffold planks, signposts and light poles, custom applications and factory-built structures.</p> <p>Parallel Strand Lumber — Parallam® Columns and posts, exposed applications, headers and beams, railroad ties and timbers, concrete forming, wood bridges, custom applications.</p> <p>Laminated Strand Lumber — TimberStrand® Beams and columns, factory-built structures (window, door and garage door headers), rim board, wall studs and plates, furniture and millwork, concrete forming, truss chords, custom applications.</p>
I-joists	Engineered for dimensional stability, they are lightweight, come in long lengths and are used for framing purposes.
Structural panels	Structural sheathing, subflooring and stair tread for residential, multi-family and commercial structures.
Oriented strand board (OSB)	OSB uses wood strands that are oriented in a cross pattern and bonded together with adhesives under heat and pressure. Used in structural wall and roof sheathing, subflooring, stair treads, webstock and a variety of industrial applications.
Softwood plywood	Plywood is manufactured from thin sheets of cross-laminated veneer bonded together with adhesives using heat and pressure. Used in building and construction panels, as well as appearance panels.
Medium density fiberboard (MDF)	MDF is manufactured from wood fiber that is bonded together with adhesives using heat and pressure. Used in furniture and cabinet components, architectural moldings, doors, store fixtures, core material for hardwood plywood, face material for softwood plywood, commercial wall paneling and substrate for laminate flooring.
Other products	Wood chips and other byproducts.
Complementary building products	Complementary building products such as cedar, decking, siding, insulation and rebar sold in our distribution facilities.



10-K notes on REIT structure

"REAL ESTATE INVESTMENT TRUST (REIT) Weyerhaeuser Company is a REIT and REIT income can be distributed to shareholders without first paying corporate level tax, substantially eliminating the double taxation on income. We also own timberland assets through a subsidiary, Weyerhaeuser Timber Holdings, Inc., which qualifies as a REIT under the Internal Revenue Code of 1986, as amended (IRC), for tax years beginning 2022. We expect to derive most of our REIT income from our timberlands, including gains from the sales of our standing timber and rent from recreational leases. We are required to pay federal corporate income taxes on earnings of our Taxable REIT Subsidiaries (TRSs), which include our Wood Products segment and a portion of our Timberlands and Real Estate, Energy and Natural Resources segments."

Real Estate Sales

Segment Statistics

		Q1.2024	Q2.2024	Q3.2024	Q3.2023	YTD.2024	YTD.2023
Net Sales (millions)	Real Estate	\$ 83	\$ 78	\$ 59	\$ 79	\$ 220	\$ 198
	Energy and Natural Resources	24	31	30	26	85	88
	Total	\$ 107	\$ 109	\$ 89	\$ 105	\$ 305	\$ 286
Acres Sold	Real Estate	19,774	37,665	17,441	25,721	74,880	55,755
Price per Acre	Real Estate	\$ 3,629	\$ 2,062	\$ 2,808	\$ 3,033	\$ 2,650	\$ 3,403
Basis as a Percent of Real Estate Net Sales	Real Estate	37%	50%	39%	43%	42%	40%

Segment Statistics

		Q1.2023	Q2.2023	Q3.2023	Q4.2023	Q4.2022	YTD.2023	YTD.2022
Net Sales (millions)	Real Estate	\$ 72	\$ 47	\$ 79	\$ 39	\$ 18	\$ 237	\$ 235
	Energy and Natural Resources	29	33	26	38	37	126	133
	Total	\$ 101	\$ 80	\$ 105	\$ 77	\$ 55	\$ 363	\$ 368
Acres Sold	Real Estate	20,753	9,281	25,721	7,187	2,745	62,942	58,791
Price per Acre	Real Estate	\$ 3,241	\$ 4,790	\$ 3,033	\$ 4,202	\$ 5,550	\$ 3,494	\$ 3,714
Basis as a Percent of Real Estate Net Sales	Real Estate	46%	28%	43%	33%	39%	39%	36%

Source: 2023 Annual Report [2023 Annual Report and 10K.pdf](#)



ALPHA  **CHALLENGE**
Kenan-Flagler Business School
The University of North Carolina

December 5th, 2024

Team: 17

Students: Francesco Brassesco, Sophia Mao, Silvio Guaita

Long: Pegasystems (NASDAQ: PEGA)

Current Price: \$91 (11/22/2024) | **2025 Price Target:** \$107 (17% Upside)

Business Overview

Building Business Agility Through Personalized Experiences, Streamlined Service, and Automated Workflows

PEGA - Company Description

- Develop, market, license, host, and support **enterprise software** Pega Infinity (latest version of software portfolio)
- **End users** include both professional developers and power users
- **Competes** with Salesforce and Dynamics in **CRM** space, Appian and Camunda in **BPM** space, and UI Path and Automation Anywhere in **RPA** space

Trading and FY23 Financial Data

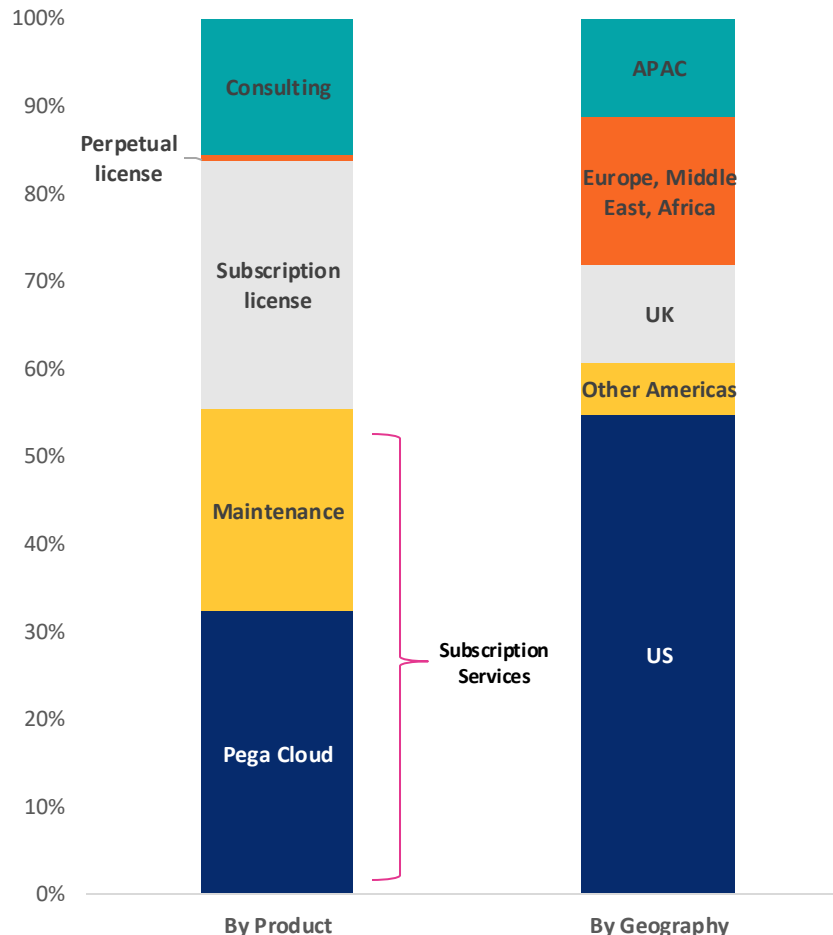
Current Price (\$)	91	Revenue (\$M)	1,480
Market Cap (\$M)	9,156	Gross Margin	73%
EV (\$M)	8,954	EBITDA (\$M)	121
52W Low / High (\$)	44.07-95.91	EPS (\$)	0.80

Who uses PEGA?

- Communications Service Providers:  
- Financial Services:    
- Government:    
- Healthcare:   
- Insurance:    
- Manufacturing & High-Tech:   

Revenue Breakdown

Total Revenue = \$1.4 billion



Investment Thesis



1. Growing TAM accelerates growth, while regulatory direction adds potential fuel, driven by PEGA Cloud and the Generative AI solution "Blueprint"

Revenue Growth



2. PEGA's Long-Term Value for Niche Industry Clients is Driven by a Scalable, Sticky Business Model

*Recurring Earnings
Stable FCF*

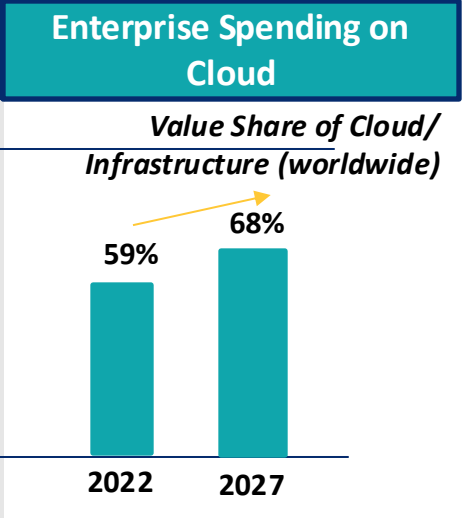
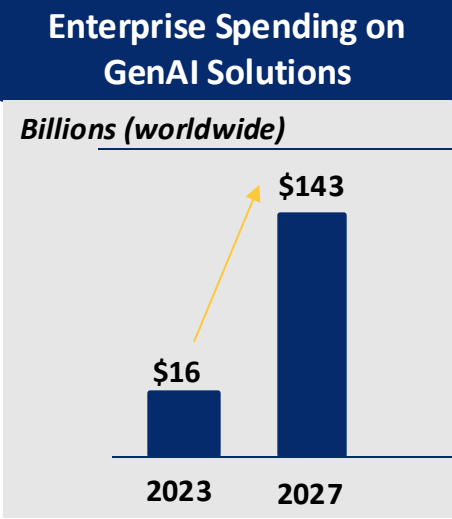


3. Completion of the Subscription Model Transition boosts the valuation multiple

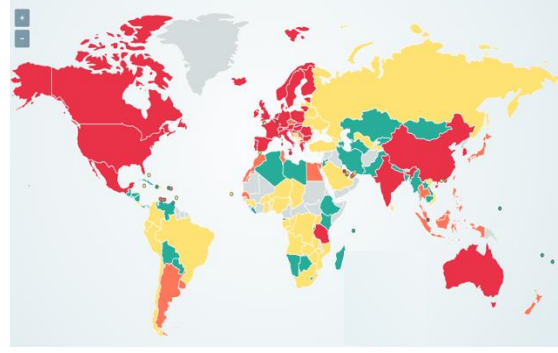
*Stable FCF
Higher ROE, ROIC*

Investment Thesis #1

Growing TAM accelerates growth, while regulatory direction adds potential fuel, driven by PEGA Cloud and the Generative AI solution "Blueprint"



Globally governments are changing mindsets and aiming to make the cloud more accessible to heavily regulated industries



Federal Financial Institutions Examination Council (FFIEC) guidance updates –2020.3
 Newer guidelines are more focused on ensuring institutions can manage third-party risks effectively rather than discouraging cloud adoption outright.

Regulation & Enforcement

- Heavy
- Robust
- Moderate
- Limited

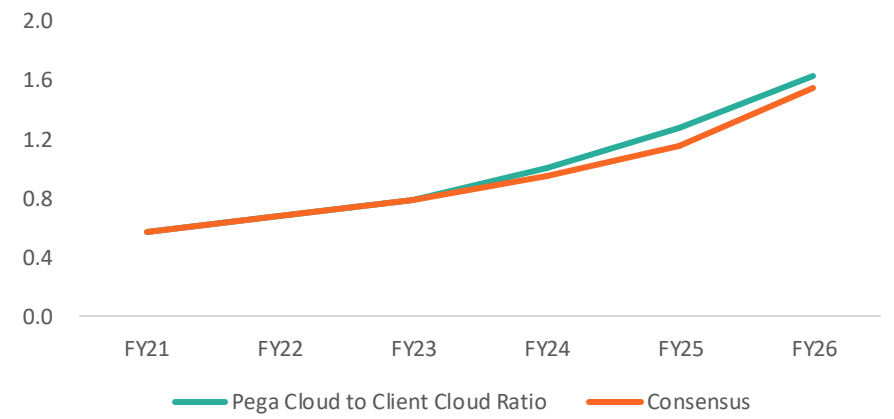
PEGA is integrating GenAI into its decision-making modules

PEGA clients can utilize various LLMs, including ChatGPT, AWS’s Amazon Bedrock, and Google Cloud’s Vertex AI, to enhance decision-making and workflow automation within the Pega Platform.

PEGA "Blueprint" is accelerating their client's workflows

By leveraging generative AI and Pega’s extensive industry expertise, Blueprint enables teams to rapidly conceptualize and develop workflow applications tailored to specific business needs.

We believe this will drastically shift their product mix as PEGA begins to grow their cloud portfolio more aggressively



Source: International Data Corporation (IDC), Federal Financial Institutions Examination Council (FFIEC), DLA Piper, FactSet, Internal Model Projections

Investment Thesis #2

PEGA's Long-Term Value for Niche Industry Clients is Driven by a Scalable, Sticky Business Model

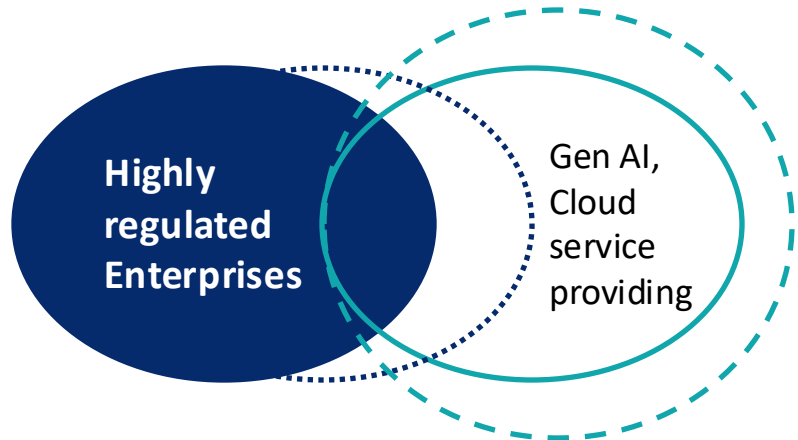
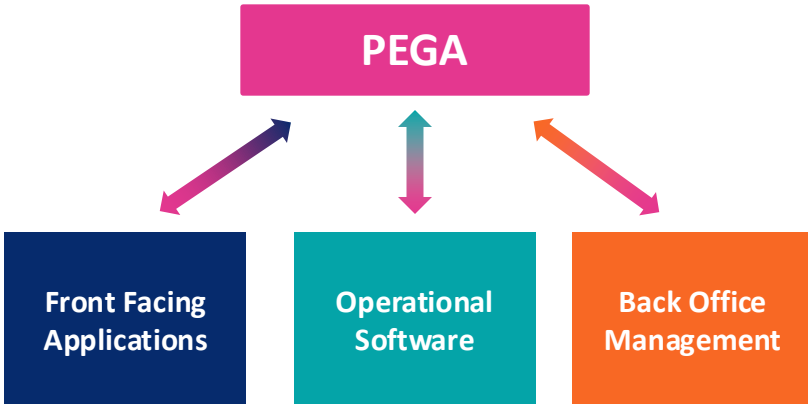
WELLS FARGO Needed a solution that delivers a seamless, consistent customer experience across all channels

- ✓ **Digital Channel:** In 350 milliseconds come back to customer with a targeted solution
- ✓ **Branch Bank:** Live in 5,000 branches, provide bankers with unique and quick customer insights to power conversation
- ✓ **Speed transformation:** Integrated in 9 months what the bank expected would take 4-5 years

The bank has explored various solutions to enhance the customer experience. Key options include:

1. In-house (bespoke software)	Offers the highest level of customization but costly, time-consuming, and requires internal expertise
2. White Label App (Velmie)	May excel in specific tasks but often sacrifice interoperability, documentation, and customizability
3. Generalist Platform (Salesforce)	Offers broad functionality but lacks niche features, requires extra coding or add-ons, and has limited, costly deployment options
4. Specialized Platform (PEGA)	Balances cost and customization, combining the documentation of larger platforms with the niche functionality of bespoke software

PEGA can entrench itself within the clients' processes thanks to its positioning



Niche industry clients require a centralized source of predictable process automation that leverages their wide range of data sets.

Highly regulated enterprises eager to embrace GenAI and cloud service, but most of the companies cannot match the high regulated ask.

Source: Pega Website, Team Analysis

Investment Thesis #3

Completion of the Subscription Model Transition boosts the valuation multiple

As PEGA nears the completion of their business model shift they can expect a multiple uplift from 2017 levels

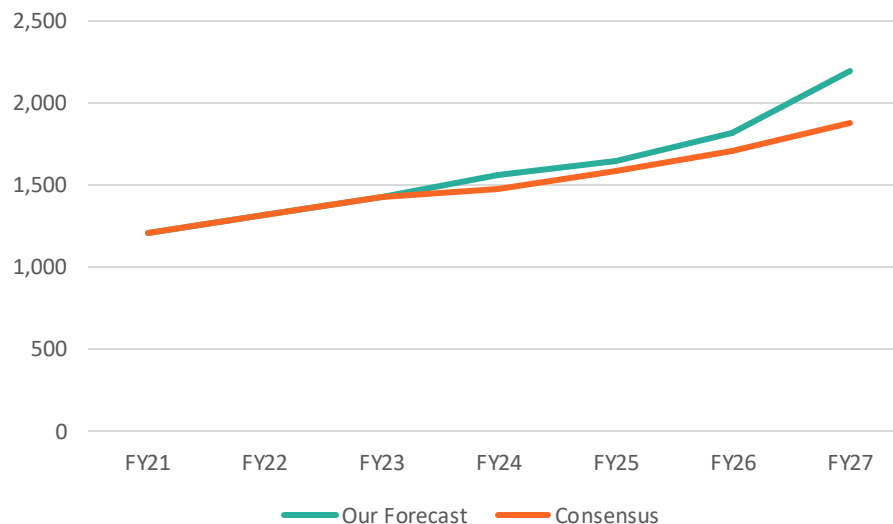
1

Fueled by the faster mix shift we forecast greater and higher quality revenues for PEGA

2

Following completion, the market is expected to reward PEGA for their improved earnings quality and higher growth rate through a ~30% multiple uplift from 2017 levels.

Multiple	2017	Our Estimate	Consensus
P/FCF	24.68	~42	~20
P/S	4.40	~6	~5



Company	Description	Date Start Transition	Date Completed	Starting Valuation		Ending Transition or latest FY valuation		Valuation Uplift	
				P/FCF	P/S	P/FCF	P/S	P/FCF	P/S
Microsoft	Office 365	2013	2017	13.56	3.77	21.21	5.62	56.4%	49.1%
PTC	Product Design software	2017	2019	60.51	5.67	36.36	6.40	(39.9%)	12.9%
Commvault	Data Protection Solution	2018		33.56	3.70	22.91	5.45	(31.7%)	47.3%
Autodesk	Product Design Software	2015	2016	19.84	5.02	30.98	4.29	56.1%	(14.5%)
Adobe	Graphic Design Software	2011	2017	10.25	3.24	32.90	12.38	221.0%	282.1%
Oracle	Enterprise Software and Database	2014		13.49	5.05	28.02	6.25	107.7%	23.8%
SAP	Enterprise Resource Planning	2015		28.47	4.11	30.42	5.41	6.8%	31.6%
IBM	Cloud and Cognitive solutions	2016		11.73	1.98	11.89	2.44	1.4%	23.2%
Intuit	Financial and Accounting Software	2014	2019	18.93	5.62	33.75	10.79	78.3%	92.0%
							Median	56.1%	31.6%
							Quartile 1	1.4%	23.2%
							Quartile 3	78.3%	49.1%

*Blank transitions which have not been completed

Valuation

12-Month Price Target of **\$107** in the Base Case with **17% Upside**

Methodology: We used 2 different approaches for valuation (P/Sales Multiple and P/FCF Multiple), and we averaged the results to determine price target

Where we differ:

1

Faster shift to PEGA cloud driven by easing regulations globally

2

Increased stickiness improving net retention rate resulting in stronger revenues

3

Multiple appreciation due to completion of transition and higher quality earnings

Valuation Summary

Scenario Weighting	Base (50%)	Bull (20%)	Bear (30%)
P/Sales - Target Price	\$116	\$132	\$81
P/Sales	6.4x	7.2x	4.9x
2025 Sales per share	\$18.26	\$18.35	\$16.53
Target Price	\$108 / 18% Upside		

Forecast vs. Consensus - Base Case

	2025			2026		
	Forecast	Consensus	Diff.	Forecast	Consensus	Diff.
Revenue	1,644	1,583	3.8%	1,821.0	1,707	7%
% growth	5%	7%		11%	8%	
Gross Profit	1,245	1,217	2.3%	1,394.9	1,303	7%
% margin	76%	77%		77%	76%	
EBITDA	331	242	36.7%	459.5	289	59%
% margin	18%	33%		21%	19%	
EPS	2.95	1.97	49.6%	4.4	2.31	91%
% growth	24%	89%		49%	17%	

Our Assumptions vs. Consensus - Base Case

	Base	Bull	Bear
P/FCF - Target Price	\$101	\$164.32	\$36
P/FCF	42.4x	48.4x	22.5x
2025 FCF per Share	\$2.37	\$3.39	\$1.60
Target Price	\$106 / 16% Upside		

	2025			2026		
	Forecast	Consensus	Diff.	Forecast	Consensus	Diff.
Total ACV	1,597	1,589.4	0%	1,820	1,809.3	1%
% growth	13%	12%		14%	14%	
Pega Cloud ACV	895	840.8	6%	1,129	1,062.4	6%
% growth	27%	22%		26%	26%	
Client Cloud ACV	702	731.6	(4%)	691	686.1	1%
% growth	(0%)	1%		(2%)	(6%)	
Total Backlog	1,918	1,873.9	2%	2,123	2,367.8	(10%)
% growth	1%	14%		11%	26%	

Final Target Price **\$107 / 17% Upside**

Risks and Mitigations

Operating in a highly competitive software industry

Pega has strategically focused on AI-driven solutions and industry-specific applications, such as Pega Blueprint and cloud offerings, tailored to sectors like banking and healthcare for **accurate market positioning**. By leveraging generative AI for custom business applications, PEGA **strengthens its market presence** and **creates barriers to entry**.

Ownership concentration raises governance concerns

Pegasystems addresses ownership concerns through Alan Trefler's **visionary leadership**, complemented by nearly **47% institutional investor oversight** and an **independent board** for balanced governance. Transparent communication, succession planning, and a focus on innovative AI and cloud solutions further reassure stakeholders and support the company's long-term stability.

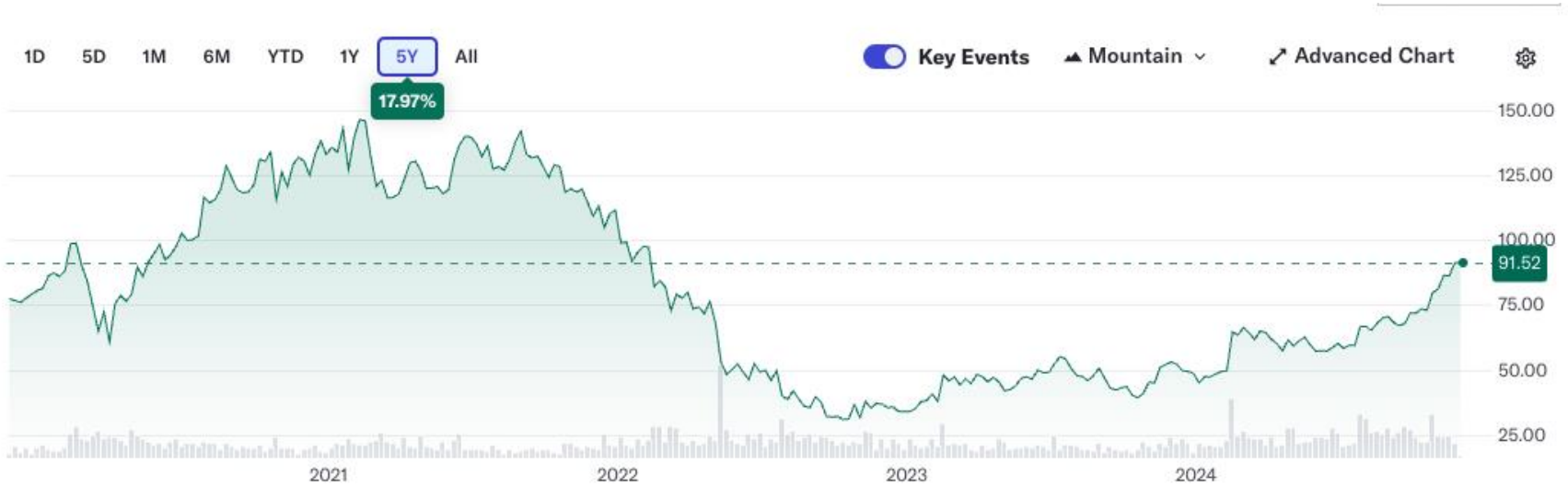
Using gen AI concerns issues like data privacy, intellectual property rights, transparency, and ethical AI use

Pegasystems focuses on **data privacy compliance**, ethical AI practices, and transparency in AI outputs. The company ensures accountability through clear documentation and audit trails, actively engages with regulators to meet evolving standards, and implements **bias-reduction techniques** alongside robust **AI governance frameworks**.



Appendix

Historical Share Price Performance



Previous Close	89.50	Day's Range	89.23 - 91.67	Market Cap (intraday)	7.848B	Earnings...	Feb 12, 2025 - Feb 17, 2025
Open	89.23	52 Week Range	44.07 - 91.67	Beta (5Y Monthly)	1.06	Forward Dividend & Yield	0.12 (0.13%)
Bid	91.41 x 100	Volume	409,633	PE Ratio (TTM)	65.37	Ex-Dividend Date	Oct 1, 2024
Ask	97.57 x 200	Avg. Volume	576,435	EPS (TTM)	1.40	1y Target Est	91.60

SaaS Industry Overview – Global

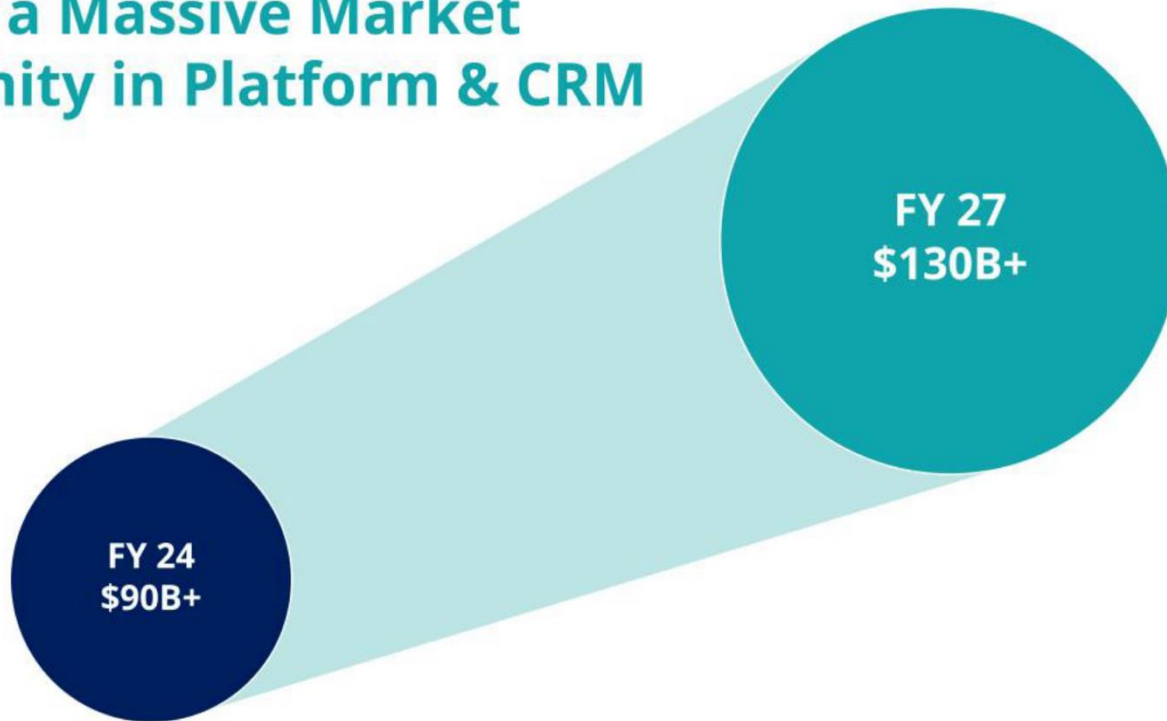
The global software as a service (SaaS) market size was USD 314.54 billion in 2023, accounted for USD 358.33 billion in 2024, and is expected to reach around USD 1,251.35 billion by 2034, expanding at a CAGR of 13.3% from 2024 to 2034.



The U.S. software as a service (SaaS) market size was estimated at USD 101.47 billion in 2023 and is predicted to be worth around USD 412.14 billion by 2034, at a CAGR of 13.5% from 2024 to 2034.

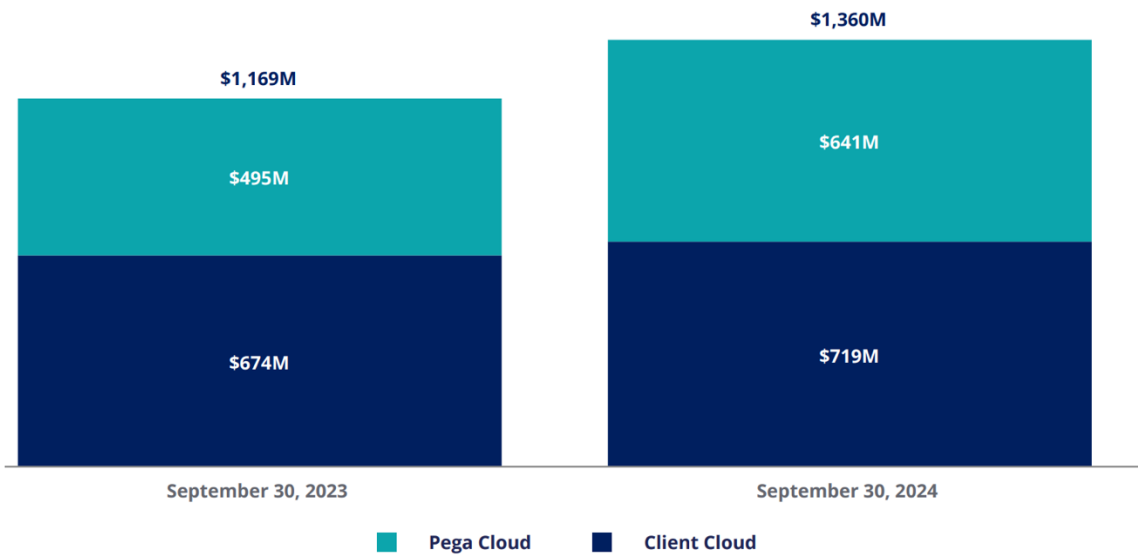


Pursuing a Massive Market Opportunity in Platform & CRM



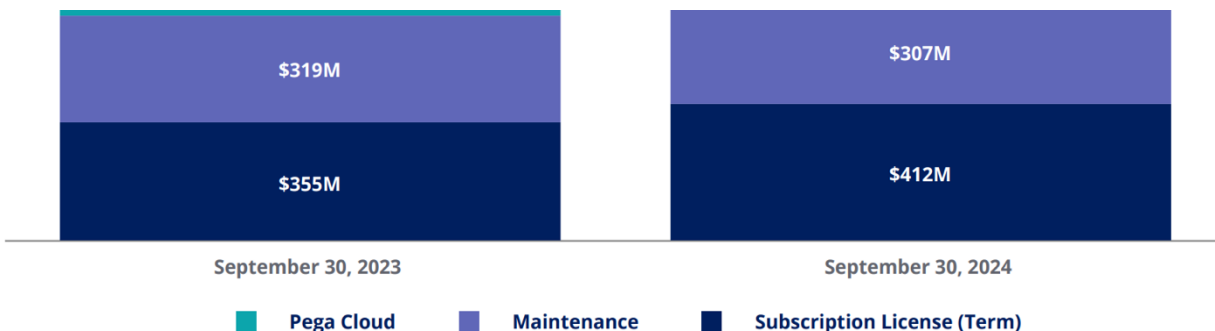
Reported ACV

Growth since Sep. 30, 2023



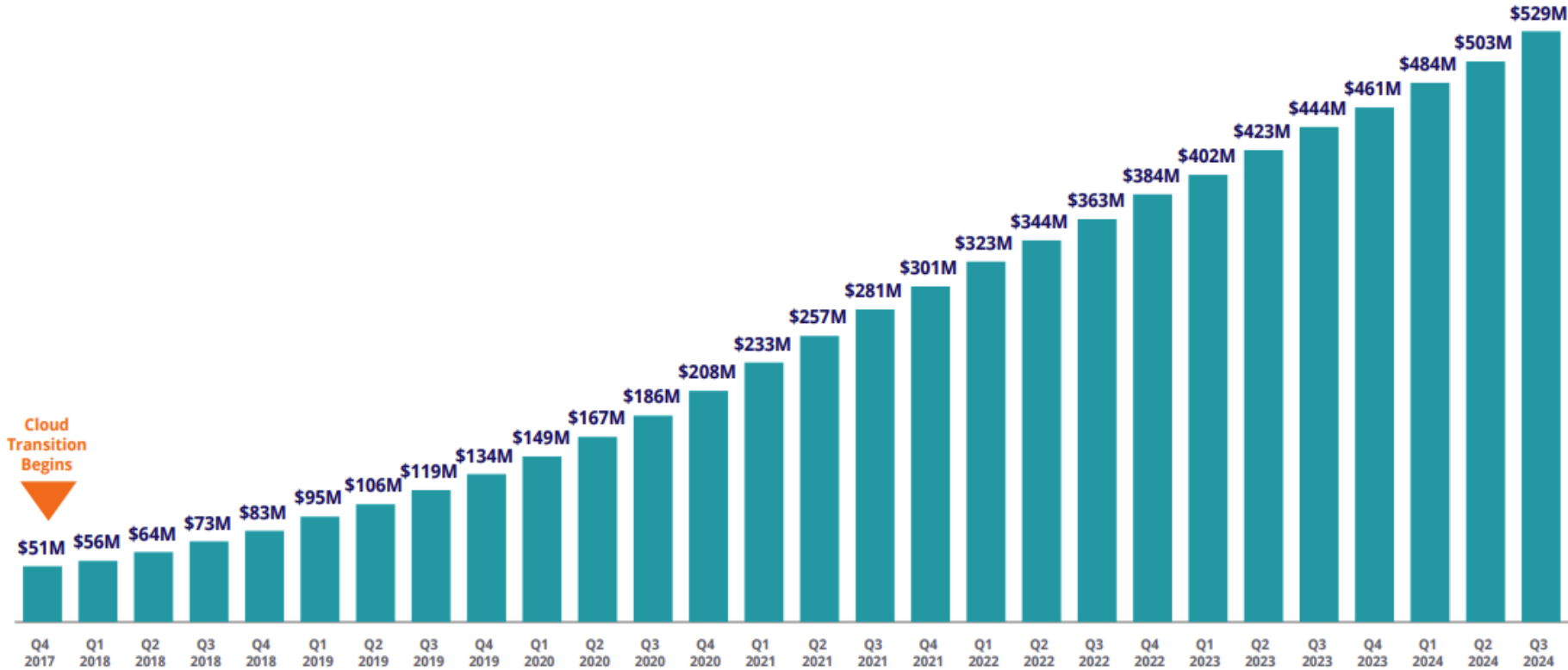
Total ACV: 16%

PEGA Cloud ACV: 30%



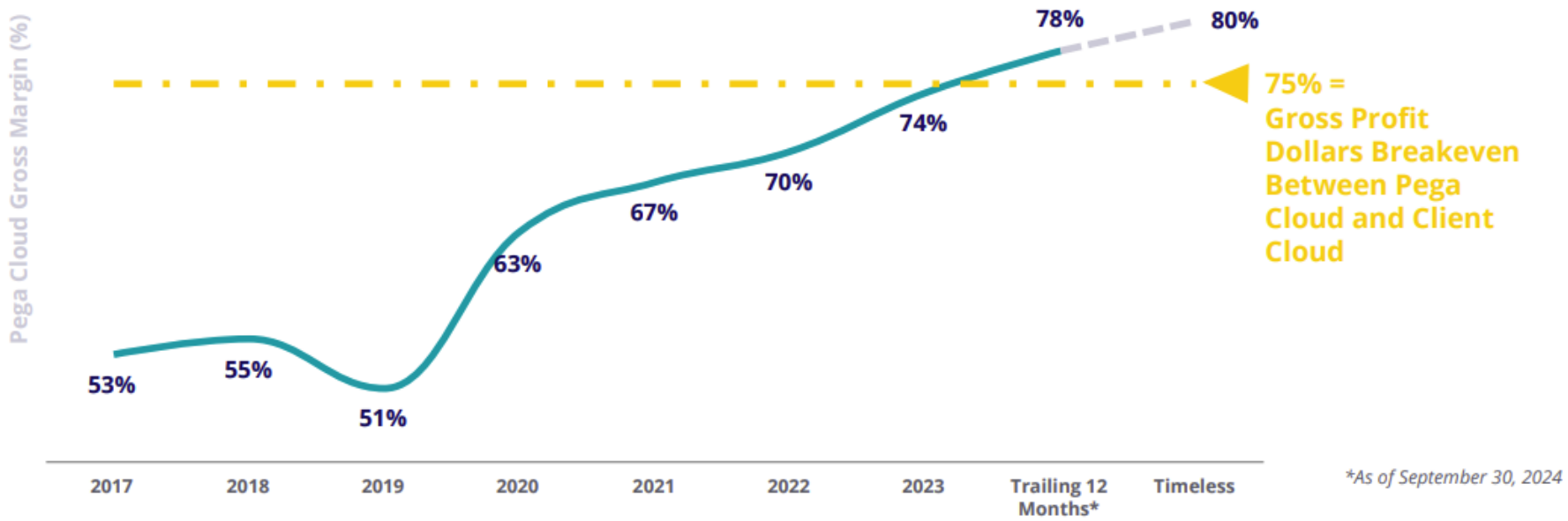
Client Cloud ACV: 7%

PEGA Cloud Revenue



PEGA Cloud Margin Cost

At or above a 75% gross margin, PEGA Cloud generates higher gross profit dollars than Client Cloud in a timeless illustrative model.



Competitors – PEGA x Salesforce x Appian

Feature	PEGA	Salesforce	Appian
Core Strength	BPM + AI Decisioning	CRM + Sales Automation	Low-Code BPM + Process Automation
Target Industry	Banking, Insurance, Health care	Broad, but strong in Sales/Marketing	Banking, Insurance, Government
Customization	Highly customizable for complex workflows	Limited customization; strong out-of-the box CRM	Customizable but best for simpler workflows
AI Integration	Advanced AI for real-time decisioning and insights	Einstein AI for CRM insights	Basic AI, focused on automating workflows
Deployment Options	Cloud-native, hybrid, or on-premises	Primarily cloud-based (Salesforce Cloud)	Cloud and on-premises
Ease of Use	Requires skilled developers for advanced workflows	Easy-to-use interface for sales/marketing teams	Easier for non-tech users due to low-code focus
Pricing	High, suitable for large enterprises	High, subscription-based	Competitive for mid-to-large enterprises

Competitors – PEGA x Microsoft x AWS

Feature	PEGA	Microsoft	AWS
Target Market	Enterprises needing tailored process automation	Broad enterprise focus; strong in SMEs	Developers and IT for cloud-first companies
Strength	Deep BPM/CRM expertise; decisioning AI	Ecosystem integration (Office, Teams)	Scalability and cloud infrastructure
Pricing	Enterprise-tier pricing	Subscription model, affordable tiers	Pay-as-you-go; infrastructure-first
Verticals	BFSI, healthcare, government	Cross-industry	Tech, startups, scalable businesses
Partnerships	Partner-focused consulting ecosystem	Dominant enterprise penetration	Tech-first and ISV partnerships
Ease of Use	Complex but powerful for large-scale automation	User-friendly, low-code/no-code tools	Requires technical expertise
Ecosystem	Highly specific; lacks broad ecosystem	Office 365, Teams, LinkedIn integration	Extensive developer tools
AI Decisioning	Advanced real-time AI decisioning	Evolving via Azure OpenAI	Data-intensive AI capabilities
Global Reach	Strong in targeted verticals	Widely adopted worldwide	Ubiquitous in cloud hosting
Innovation Pace	Continuous refinement of BPM/CRM	Rapid integration with OpenAI	Cutting-edge cloud tools

Multiples

Downside Case (P/FCF)		
FCF/Share	\$	1.60
P/FCF Multiple		22.5x
Target Price	\$	36.09
Upside		-60.6%

Base Case (P/FCF)		
FCF/Share	\$	2.37
P/FCF Multiple		42.4x
Target Price	\$	100.55
Upside		9.9%

Upside Case (P/FCF)		
FCF/Share	\$	3.39
P/FCF Multiple		48.4x
Target Price	\$	164.32
Upside		79.5%

Target Price (P/FCF)		
Base Case x 50%	\$	100.55
Upside Case x 20%	\$	164.32
Downside Case x 30%		36.1x
Target Price	\$	106.79
Upside		16.7%

Downside Case (P/Sales)		
Sales/Share	\$	16.53
P/S Multiple		4.9x
Target Price	\$	80.67
Upside		-11.9%

Base Case (P/Sales)		
Sales/Share	\$	18.26
P/S Multiple		6.4x
Target Price	\$	116.35
Upside		27.1%

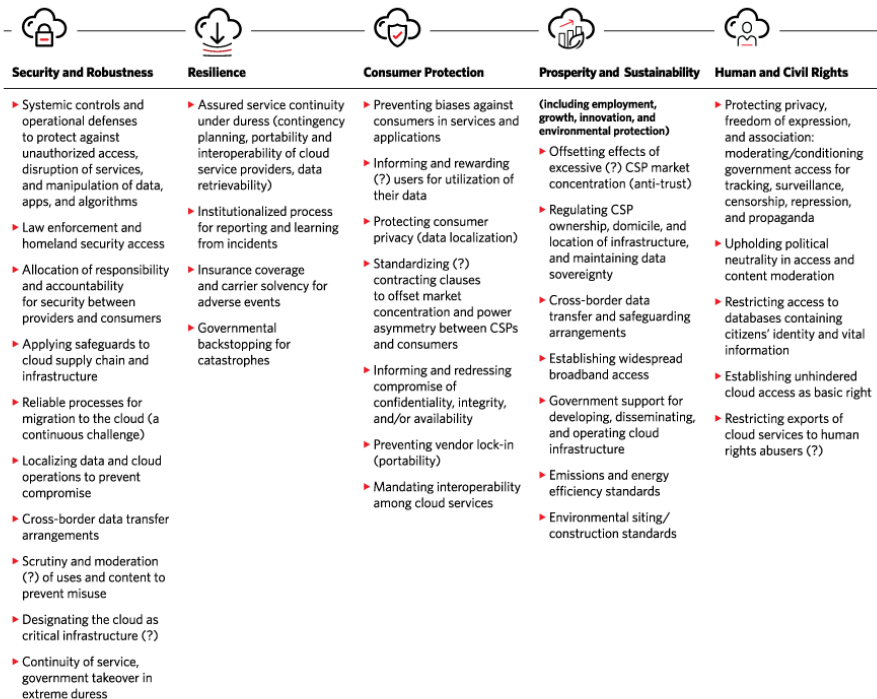
Upside Case (P/Sales)		
Sales/Share	\$	18.35
P/S Multiple		7.2x
Target Price	\$	132.39
Upside		44.7%

Target Price (P/Sales)		
Base Case x 50%	\$	116.35
Upside Case x 20%	\$	132.39
Downside Case x 30%		80.7x
Target Price	\$	108.85
Upside		18.9%

Weighted Target Price	\$	107.82
Upside		17.8%

OVERVIEW OF CLOUD GOVERNANCE ISSUES

Below are five baskets of cloud governance goals, and means being considered for their attainment. These items highlight the scope and complexity of the cloud governance challenges involved.



NOTES:

- Many items listed here cut across different goals. In addition, items often exist in tension with one another; policies in the same category, as well as those oriented toward different goals, and even the goals themselves, can potentially conflict with each other, adding to the challenges of governance.
- (?) = Items or phrases accompanied by this symbol represent issues most recently emerging in the policy and regulatory landscape, which even sophisticated actors may not have specific views on or even knowledge of.

DRIVERS OF CLOUD GOVERNANCE

Federal and provincial legislation and regulations	International treaties/agreements
Court rulings	Individual corporate self-regulation
Trade groups and other ESG (CSR) initiatives	Voluntary norms and standards set by domestic and international organizations
Informal demands by government authorities	Use of government purchasing and contracting power



Emerging Global AI Regulations

Global / Multi-National

- CISA, NSA, FBI
- CCCS
- NSCS-UK
- ACSC
- NSCS-NZ

Joint Report:
Deploying AI Systems Securely

- OWASP Top 10 for LLMs**
- ATLAS** (Adversarial Threat Landscape for Artificial-Intelligence Systems)
- Vendor AI Security Frameworks
- Vendor AI Security Frameworks
- AI Management Systems
AI Functional Safety
- UN Resolution on AI Systems
- Declaration on the use of AI



Income Statement

PEGA, Inc. - Income Statement

(\$ in millions)	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
	DEC-20A	DEC-21A	DEC-22A	DEC-23A	DEC-24E	DEC-25E	DEC-26E	DEC-27E	DEC-28E	DEC-29E
Revenues	1,017.5	1,211.7	1,317.8	1,432.6	1,558.5	1,643.6	1,821.0	2,203.2	2,498.8	2,860.6
Cost of revenues	(312.4)	(337.8)	(370.0)	(379.9)	(380.5)	(398.7)	(426.1)	(481.3)	(526.5)	(580.6)
Depreciation	37.6	41.9	34.7	18.7	57.7	52.6	63.7	57.3	50.0	57.2
Gross profit	705.1	873.8	947.8	1,052.8	1,178.1	1,244.9	1,394.9	1,722.0	1,972.3	2,280.0
Selling, general and administrative	(848.6)	(968.6)	(1,035.5)	(950.1)	(1,072.3)	(1,024.0)	(1,127.2)	(1,319.7)	(1,496.8)	(1,713.5)
Income / loss from operations	(143.5)	(94.7)	(87.7)	102.7	105.8	220.9	267.7	402.2	475.5	566.5
Other income, net	6.3	(5.7)	6.8	21.4	31.2	41.1	54.6	66.1	75.0	85.8
Interest Expense, net	19.4	8.0	7.8	6.9	4.7	1.6	1.8	2.2	2.5	2.9
Unusual Expense - Net	(31.7)	23.6	73.1	21.7	0.0	0.0	0.0	0.0	0.0	0.0
Income / loss before income taxes provision / benefit	(124.9)	(132.0)	(161.8)	95.4	132.3	260.3	320.5	466.1	548.0	649.5
Income Taxes	63.5	68.9	(183.8)	(27.6)	(23.8)	(46.9)	(57.7)	(83.9)	(98.6)	(116.9)
Net income	(61.4)	(63.0)	(345.6)	67.8	108.5	213.5	262.8	382.2	449.3	532.6
GAAP Basic Earnings per Share	(0.8)	(0.8)	(4.2)	0.8	1.2	2.3	2.8	4.1	4.9	5.8
Basic Weighted Average Shares	80.3	81.4	81.9	83.2	88.5	92.2	93.2	93.3	92.4	91.5
		1.3%	0.7%	1.5%	6.4%	4.2%	1.1%	0.1%	(1.0%)	(1.0%)
GAAP Diluted Earnings per Share	(0.8)	(0.8)	(4.2)	0.8	1.2	2.4	3.0	4.4	5.2	6.3
Diluted Weighted Average Shares	80.3	81.4	81.9	84.9	88.0	90.0	89.0	87.0	86.0	85.0
		1.3%	0.7%	3.6%	3.6%	2.3%	(1.1%)	(2.2%)	(1.1%)	(1.2%)
Model Assumptions										
Sales Growth	-	19.1%	8.8%	8.7%	8.8%	5.5%	10.8%	21.0%	13.4%	14.5%
Depreciation % of Sales	3.7%	3.5%	2.6%	1.3%	3.7%	3.2%	3.5%	2.6%	2.0%	2.0%
Cost of Revenue as a % of Sales	(30.7%)	(27.9%)	(28.1%)	(26.5%)	(24.4%)	(24.3%)	(23.4%)	(21.8%)	(21.1%)	(20.3%)
SG&A as a % of Sales	(83.4%)	(79.9%)	(78.6%)	(66.3%)	(68.8%)	(62.3%)	(61.9%)	(59.9%)	(59.9%)	(59.9%)
Other income, net as a % of Sales	0.6%	(0.5%)	0.5%	1.5%	2.0%	2.5%	3.0%	3.0%	3.0%	3.0%
Unusual Expense - Net as a % of Sales	(3.1%)	2.0%	5.5%	1.5%						
Interest Expense, net as a % of Sales	1.9%	0.7%	0.6%	0.5%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%
Tax rate	(50.9%)	(52.2%)	113.6%	(29.0%)	(18.0%)	(18.0%)	(18.0%)	(18.0%)	(18.0%)	(18.0%)
Key Performance Metrics										
Gross Margin	69.3%	72.1%	71.9%	73.5%	75.6%	75.7%	76.6%	78.2%	78.9%	79.7%
EBITDA	(105.9)	(52.9)	(52.9)	121.4	163.5	273.5	331.4	459.5	525.5	623.8
EBITDA margin	(10.4%)	(4.4%)	(4.0%)	8.5%	10.5%	16.6%	18.2%	20.9%	21.0%	21.8%
EBIT margin	(14.1%)	(7.8%)	(6.7%)	7.2%	6.8%	13.4%	14.7%	18.3%	19.0%	19.8%
Pre-Tax Margin	(12.3%)	(10.9%)	(12.3%)	6.7%	8.5%	15.8%	17.6%	21.2%	21.9%	22.7%
Net Margin	(6.0%)	(5.2%)	(26.2%)	4.7%	7.0%	13.0%	14.4%	17.3%	18.0%	18.6%

Revenue Build

PEGA, Inc. - Revenue Build									
	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
(\$ in millions)	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec
ACV									
PY ACV	835.5	1,002.6	1,128.5	1,254.9	1,410.5	1,596.7	1,820.2	2,089.6	2,415.6
NRR of ACV(\$)	125.3	100.3	112.8	138.0	163.6	194.8	233.0	280.0	338.2
NRR of ACV (%)	15.0%	10.0%	10.0%	11.0%	11.6%	12.2%	12.8%	13.4%	14.0%
New Logos (\$)	41.8	25.6	13.6	17.6	22.6	28.7	36.4	46.0	58.0
New Logo (%)	5.0%	2.6%	1.2%	1.4%	1.6%	1.8%	2.0%	2.2%	2.4%
Ending ACV	1,002.6	1,128.5	1,254.9	1,410.5	1,596.7	1,820.2	2,089.6	2,415.6	2,811.7
% Growth	20.0%	12.6%	11.2%	12.4%	13.2%	14.0%	14.8%	15.6%	16.4%
ACV Breakdown									
Subscription Services	694.9	782.6	877.1	1,024.6	1,203.8	1,422.4	1,690.3	2,020.4	2,429.1
% Total ACV	69.3%	69.3%	69.9%	72.6%	75.4%	78.1%	80.9%	83.6%	86.4%
Pega Cloud	364.0	454.6	553.0	706.0	894.8	1,129.1	1,421.3	1,787.6	2,249.1
% Total ACV	36.3%	40.3%	44.1%	50.1%	56.0%	62.0%	68.0%	74.0%	80.0%
Maintenance	330.9	328.0	324.1	318.6	309.0	293.3	269.1	232.8	180.0
% Total ACV	33.0%	29.1%	25.8%	22.6%	19.4%	16.1%	12.9%	9.6%	6.4%
Subscription License / Term License	307.8	345.9	377.8	385.9	392.9	397.8	399.3	395.1	382.6
% Total ACV	30.7%	30.7%	30.1%	27.4%	24.6%	21.9%	19.1%	16.4%	13.6%
ACV Additional									
Client Cloud	638.7	673.9	701.9	704.5	701.9	691.1	668.3	628.0	562.6
% Total ACV	63.7%	59.7%	55.9%	49.9%	44.0%	38.0%	32.0%	26.0%	20.0%
Pega Cloud to Client Cloud Ratio	0.6	0.7	0.8	1.0	1.3	1.6	2.1	2.8	4.0
Consensus Pega Cloud to Client Cloud Ratio									
Revenue Breakdown									
Subscription Services	621.2	701.8	793.2	900.9	1,049.8	1,247.7	1,455.2	1,727.4	2,073.9
% ACV/Revenue	111.9%	111.5%	110.6%	113.7%	114.7%	114.0%	116.2%	117.0%	117.1%
% of total rev	51.3%	53.3%	55.4%	57.8%	63.9%	68.5%	66.0%	69.1%	72.5%
Pega Cloud	301.0	384.3	461.3	589.5	747.7	944.3	1,189.6	1,497.5	1,885.7
% ACV/Revenue	120.9%	118.3%	119.9%	119.8%	119.7%	119.6%	119.5%	119.4%	119.3%
% of total rev	24.8%	29.2%	32.2%	37.8%	45.5%	51.9%	54.0%	59.9%	65.9%
Maintenance	320.3	317.6	331.9	311.4	302.1	303.4	265.5	229.9	188.1
% ACV/Revenue	103.3%	103.3%	97.7%	102.3%	102.3%	96.7%	101.3%	101.3%	95.7%
% of total rev	26.4%	24.1%	23.2%	20.0%	18.4%	16.7%	12.1%	9.2%	6.6%
Subscription License / Term License	336.2	366.1	407.6	428.7	364.8	333.5	475.3	481.9	478.3
% ACV/Revenue	91.5%	94.5%	92.7%	90.0%	88.0%	86.0%	84.0%	82.0%	80.0%
% of total rev	27.8%	27.8%	28.5%	27.5%	22.2%	18.3%	21.6%	19.3%	16.7%
Total Revenue Excl. Consulting & Perpetual License	957.5	1,067.9	1,200.8	1,329.6	1,414.6	1,581.2	1,930.5	2,209.3	2,552.2
% ACV/Revenue of total revenue Excl. Consulting and Perpetual License	104.7%	105.7%	104.5%	106.1%	112.9%	115.1%	108.2%	109.3%	110.2%
	79.0%	81.0%	83.8%	85.3%	86.1%	86.8%	87.6%	88.4%	89.2%
Consulting Revenues	222.0	230.7	221.7	225.5	225.8	236.6	269.6	286.4	305.3
% Capture	23.2%	21.6%	18.6%	17.0%	16.0%	15.0%	14.0%	13.0%	12.0%
% of total rev	18.3%	17.5%	15.5%	14.5%	13.7%	13.0%	12.2%	11.5%	10.7%
Perpetual License	32.2	19.3	10.1	3.4	3.2	3.2	3.2	3.1	3.1
% Churn		(40.0%)	(47.6%)	(47.6%)	(48.6%)	(50.6%)	(52.6%)	(54.6%)	(55.6%)
% of total rev	2.7%	1.5%	0.7%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%
Total Revenues	1,211.7	1,317.8	1,432.6	1,558.5	1,643.6	1,821.0	2,203.2	2,498.8	2,860.6
% Growth		8.8%	8.7%	8.8%	5.5%	10.8%	21.0%	13.4%	14.5%
Revenue Additional									
Private Cloud	656.5	683.6	739.5	740.1	666.9	637.0	740.9	711.8	666.4
% ACV/Revenue	97.3%	98.6%	94.9%	52.5%	41.8%	35.0%	35.5%	29.5%	23.7%
Pega Cloud to Private cloud Ratio	0.5	0.6	0.6	0.8	1.1	1.5	1.6	2.1	2.8
Total Backlog	1,344.89	1,355.73	1,463.37	1,892.01	1,918.20	2,122.62	2,802.95	2,902.01	3,278.87
x ACV	1.34	1.20	1.17	1.3	1.2	1.2	1.3	1.2	1.2

Margin Build

PEGA, Inc. - Revenue Build									
	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
(\$ in millions)	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec
Consolidated Cost Of Revenues									
Subscription Services	120.4	138.7	144.3	156.6	176.2	194.5	218.1	248.5	285.9
Subscription License	2.4	2.6	2.6	2.7	2.3	2.1	3.0	3.1	3.1
Consulting	213.3	227.1	231.6	221.0	220.2	229.5	260.1	274.9	291.6
Perpetual License	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Cost of Revenues	336.4	368.6	378.5	380.5	398.7	426.1	481.3	526.5	580.6
% Growth	-	9.6%	2.7%	0.5%	4.8%	6.9%	12.9%	9.4%	10.3%
Margins									
Subscription Services	80.6%	80.2%	81.8%	0.8	0.8 ▲	0.8	0.9	0.9	0.9
Subscription License	99.3%	99.3%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%	99.4%
Consulting	3.9%	1.5%	(4.4%)	0.0 ▲	0.0 ▲	0.0 ▲	0.0 ▲	0.0 ▲	0.0
Perpetual License	99.3%	99.1%	99.3%	1.0	1.0	1.0	1.0	1.0	1.0
Overall	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8

Cash Flow Statement

PEGA, Inc. - Cash Flow Statement

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
(\$ in millions)	DEC-19A	DEC-20A	DEC-21A	DEC-22A	DEC-23A	DEC-24E	DEC-25E	DEC-26E	DEC-27E	DEC-28E
Operating Activities										
Net income from operations	\$ (61.4)	\$ (63.0)	\$ (345.6)	\$ 67.8	\$ 108.5	\$ 213.5	\$ 262.8	\$ 382.2	\$ 449.3	\$ 532.6
Depreciation & Amortization	\$ 37.6	\$ 41.9	\$ 34.7	\$ 18.7	\$ 57.7	\$ 52.6	\$ 63.7	\$ 57.3	\$ 50.0	\$ 57.2
Changes in Working Capital	\$ (33.0)	\$ (59.5)	\$ (64.4)	\$ (78.0)	\$ (23.7)	\$ (38.7)	\$ (40.5)	\$ (105.5)	\$ (68.3)	\$ (79.9)
Deferred Taxes & Investment Tax Credit	\$ (59.8)	\$ (75.3)	\$ 168.9	\$ 0.4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Funds	\$ 116.0	\$ 195.2	\$ 228.7	\$ 208.9	\$ 231.6	\$ 244.2	\$ 270.6	\$ 327.4	\$ 371.3	\$ 425.1
Cash Flow from Operating Activities	\$ (0.6)	\$ 39.1	\$ 22.3	\$ 217.8	\$ 374.1	\$ 471.6	\$ 556.6	\$ 661.4	\$ 802.3	\$ 935.0
Investing Activities										
Capital Expenditures	\$ (25.4)	\$ (10.5)	\$ (35.4)	\$ (16.8)	\$ (28.1)	\$ (32.9)	\$ (40.1)	\$ (52.9)	\$ (65.0)	\$ (80.2)
Net Assets from Acquisitions	\$ -	\$ (5.0)	\$ (0.9)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Purchase/Sale of Investments	\$ (296.3)	\$ 88.0	\$ 49.4	\$ (34.0)	\$ (79.8)	\$ (84.2)	\$ (93.3)	\$ (112.8)	\$ (128.0)	\$ (146.5)
Cash Flow from Investing Activities	\$ (321.7)	\$ 72.5	\$ 13.1	\$ (50.8)	\$ (107.9)	\$ (117.1)	\$ (133.4)	\$ (165.8)	\$ (193.0)	\$ (226.7)
Free Cash Flow	\$ (25.9)	\$ 28.7	\$ (13.0)	\$ 201.0	\$ 346.0	\$ 439	\$ 516	\$ 608	\$ 737	\$ 855
FCF per share										
Financing Activities										
Common Dividends	\$ (9.6)	\$ (9.6)	\$ (9.8)	\$ (10.0)	\$ (8.7)	\$ (17.1)	\$ (21.0)	\$ (30.6)	\$ (35.9)	\$ (42.6)
Change in Capital Stock	\$ (100.5)	\$ (112.1)	\$ (37.2)	\$ 16.6	\$ 40.1	\$ 162	\$ (81)	\$ (162)	\$ (81)	\$ (81)
Issuance/Reduction of Debt, Net	\$ 533.6	\$ -	\$ -	\$ (89.0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cash Flow from Financing Activities	\$ 423.4	\$ (121.8)	\$ (47.0)	\$ (82.3)	\$ 31.5	\$ 144.9	\$ (102.0)	\$ (192.6)	\$ (116.9)	\$ (123.6)
Cash, cash equivalents and restricted cash, beginning of period	364.0	373.0	465.2	362.8	423.3	423.3	922.7	1,244.0	1,546.9	2,039.2
Net Change in Cash	101	(10)	(12)	85	298	499	321	303	492	585
Cash and cash equivalents, end of period	\$ 465.2	\$ 362.8	\$ 297.2	\$ 423.3	\$ 721.0	\$ 922.7	\$ 1,244.0	\$ 1,546.9	\$ 2,039.2	\$ 2,623.9
<i>Check</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>	<i>Reconciles</i>

Comparable Companies

Comparable Company Valuation Multiples		Market Data			P/FCF		P/Sales		Performance Metrics (2025)			
Company	Ticker	Stock Price	Mkt Cap (\$M)	EV (M)	2024	2025	2024	2025	Sales	EBITDA	FCF	
PEGA (Consensus)			\$91.52	8,751	8,549	22.8x	20.2x	5.2x	4.8x	\$1,583	\$242	\$352
PEGA (Our Estimates)						23.3x	18.6x	5.2x	5.3x	\$1,644	\$273	\$439
Comparable Company Valuation Multiples		Market Data			P/FCF		P/Sales		Performance Metrics (2024)			
ServiceNow	NOW-US	\$1,080.60	225,641	221,431	65.4x	54.0x	19.6x	16.3x	\$10,987	\$3,690	\$3,444	
Verint Systems	VRNT-US	\$24.43	1,612	2,218	9.7x	8.6x	1.6x	1.5x	\$933	\$271	\$177	
IBM	IBM-US	\$222.97	213,000	257,160	19.3x	16.5x	3.3x	3.1x	\$62,823	\$15,991	\$11,819	
Fair Isaac	FICO-US	\$2,355.35	58,767	60,825	83.4x	-	28.3x	24.6x	\$2,008	\$1,113	\$762	
CSG Systems	CSGS-US	\$55.51	1,615	2,036	15.8x	14.3x	1.5x	1.4x	\$1,102	\$249	\$103	
Appian A	APPN-US	\$38.56	2,924	3,037	1285.0x	101.4x	4.6x	4.2x	\$615	\$6	\$(1)	
Salesforce	CRM-US	\$342.02	338,737	334,531	27.2x	23.8x	8.5x	7.8x	\$37,856	\$15,329	\$12,007	
Oracle	ORCL-US	\$192.29	566,972	641,342	73.8x	56.3x	9.2x	8.2x	\$58,061	\$31,379	\$8,860	
SAP	SAP-DE	\$235.16	295,713	292,810	67.4x	31.3x	8.1x	7.3x	\$35,654	\$8,707	\$4,106	
Median					65.4x	27.6x	8.1x	7.3x				
Lower Quartile					19.3x	16.0x	3.3x	3.1x				
Upper Quartile					73.8x	54.6x	9.2x	8.2x				

DCF Valuation

Discount Rate (WACC)							
Weighted Average Cost of Capital (WACC)	2,023	2,024	2,025	2,026	2,027	2,028	VT
Risk free rate 5y	4.25%	4.25%	4.04%	3.84%	3.64%	3.46%	4.53%
Market Premium (Damodaran)	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Beta (Yahoo Finance)	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Market Premium adjusted by Beta	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%	4.88%
Cost of Equity	9.13%	9.13%	8.92%	8.72%	8.52%	8.34%	8.34%
Estimate cost of debt	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Cost of debt net of income tax	5.72%	5.72%	5.72%	5.72%	5.72%	5.72%	5.72%
Debt/(Debt+Equity)	61.54%	61.54%	61.54%	61.54%	61.54%	61.54%	61.54%
WACC	7.03%	7.03%	6.95%	6.87%	6.80%	6.73%	6.73%

Fiscal Year	2,023	12/31/24	12/31/25	12/31/26	12/31/27	12/31/28
Valuation Cash Flow	Proy.	Proy.	Proy.	Proy.	Proy.	Proy.
EBITDA	163.5	273.5	331.4	459.5	525.5	525.5
EBITDA margin (%)	0.1	0.2	0.2	0.2	0.2	0.2
Less: Changes in Working Capital	(23.7)	(38.7)	(40.5)	(105.5)	(68.3)	(68.3)
Income Tax 1	(23.8)	(46.9)	(57.7)	(83.9)	(98.6)	(98.6)
CAPEX	(28.1)	(32.9)	(40.1)	(52.9)	(65.0)	(65.0)
FCF	87.9	155.0	193.1	217.1	293.5	293.5
Terminal Value						11,188.0
Valuation Date	11/25/24					
Years from Valuation DATE	0.1	1.1	2.1	3.1	4.1	
WACC Rate	7.03%	6.95%	6.87%	6.80%	6.73%	
Discount Factor	1.0	0.9	0.9	0.8	0.8	
NPV of FCF	87.3	144.0	168.0	177.1	224.7	
NPV of Terminal Value						8,565.9

Growth rate 4.00%

Company Value	8,790.6
Equity Value	8,945.3
Price per Share	104.3

Balance Sheet

PEGA, Inc. - Balance Sheet										
	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
(\$ in Million)	DEC-20A	DEC-21A	DEC-22A	DEC-23A	DEC-24E	DEC-25E	DEC-26E	DEC-27E	DEC-28E	DEC-29E
Assets										
Cash and cash equivalents	465.2	362.8	297.2	423.3	721.0	922.7	1,244.0	1,546.9	2,039.2	2,623.9
Short-Term Receivables, net	438.3	422.0	511.8	558.6	589.7	630.4	673.5	784.7	855.8	940.5
Other Current Assets	73.5	55.5	37.5	47.1	47.1	69.9	90.1	118.1	164.9	212.0
Total current assets	976.9	840.2	846.5	1,029.0	1,357.8	1,623.0	2,007.6	2,449.7	3,059.9	3,776.4
Net Property, Plant & Equipment	108.0	114.4	131.2	111.5	81.9	62.2	38.6	34.3	49.4	72.3
Long-Term Investments	213.0	208.0	127.9	128.4	127.9	128.4	128.4	128.4	128.4	128.4
Intangible Assets	95.0	96.0	92.3	88.6	122.6	202.4	286.6	379.9	492.7	620.7
Deferred Tax Assets	0.0	0.0	4.8	3.7	4.8	3.7	3.7	3.7	3.7	3.7
Other Assets	211.3	334.9	155.0	149.5	162.7	155.1	153.6	163.9	160.9	155.5
Total Assets	\$ 1,604.3	\$ 1,993.5	\$ 1,357.7	\$ 1,510.7	\$ 1,857.7	\$ 2,174.9	\$ 2,618.5	\$ 3,199.8	\$ 3,894.9	\$ 4,757.0
Liabilities & Shareholders' Equity										
Accounts payable	24.0	15.3	18.2	11.3	18.8	20.8	23.3	29.0	31.7	36.6
Current portion of long-term debt	18.5	7.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Other Current Liabilities	417.6	463.1	505.8	550.8	546.4	542.3	619.5	751.7	882.5	1,044.5
Total current liabilities	460.1	485.4	538.9	577.1	580.2	578.0	657.9	795.7	929.2	1,096.1
Long-term debt	577.266	678.54	672.761	566.269	566	566	566	566	566	566
Other Liabilities	24.7	13.5	15.1	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Total Liabilities	1,062.1	1,177.4	1,226.8	1,156.9	1,160.0	1,157.9	1,237.7	1,375.6	1,509.1	1,676.0
Common Stock & Additional Paid-in Capital	205.2	146.6	230.4	380.4	420.6	582.6	501.6	339.6	258.6	177.6
Retained earnings	339.9	276.4	(76.5)	(8.7)	91.1	287.5	529.3	880.9	1,294.3	1,784.3
Other	(2.9)	(7.0)	(23.1)	(17.9)	186.0	146.9	350.0	563.7	832.9	1,119.2
Total Equity	542.2	416.1	130.8	353.8	697.7	1,017.0	1,380.9	1,784.2	2,385.8	3,081.1
Total Liabilities and Equity	\$ 1,604.3	\$ 1,993.5	\$ 1,357.7	\$ 1,510.7	\$ 1,857.7	\$ 2,174.9	\$ 2,618.5	\$ 3,199.8	\$ 3,894.9	\$ 4,757.0
Check	Balances	Balances	Balances	Balances	Balances	Balances	Balances	Balances	Balances	Balances
Model Assumptions										
Days Sales Outstanding (DSO)	157 Days	130 Days	129 Days	136 Days	138 Days	140 Days	135 Days	130 Days	125 Days	120 Days
Days Payable Outstanding (DPO)	28 Days	21 Days	17 Days	14 Days	18 Days	19 Days	20 Days	22 Days	22 Days	23 Days
Cash Conversion	129 Days	108 Days	113 Days	122 Days	120 Days	121 Days	115 Days	108 Days	103 Days	97 Days
Receivables	438	422	512	559	590	630	674	785	866	940
Accounts Payable	24	15	18	11	19	21	23	29	32	37
Working Capital	414	407	494	547	571	610	650	796	824	904
Working Capital as a % of Sales	0.4	0.3	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Other Current Assets as % of Sales	0.1	0.0	0.0	0.0	4.5%	5.5%	6.5%	7.5%	8.5%	9.5%
Other Current Liabilities as % of SG&A	(0.5)	(0.5)	(0.5)	(0.6)	(51.0%)	(53.0%)	(55.0%)	(57.0%)	(59.0%)	(61.0%)
CAPEX as % of Sales	(0.0)	(0.0)	(0.0)	(0.0)	(1.8%)	(2.0%)	(2.2%)	(2.4%)	(2.6%)	(2.8%)
Purchase/Sale of Investments as % of Sales	(0.3)	0.1	0.0	(0.0)	(5.1%)	(5.1%)	(5.1%)	(5.1%)	(5.1%)	(5.1%)
Deferred Taxes & Investment Tax Credit as % of Sales	0.0	0.0	0.0	0.0						
Dividends as % of Net Income	(0.2)	(0.2)	(0.0)	(0.1)	(8.0%)	(8.0%)	(8.0%)	(8.0%)	(8.0%)	(8.0%)
Intangible Assets as % of Sales	0.1	0.1	0.1	0.1	6.2%	5.2%	4.2%	1.8%	0.6%	(0.2%)
Other Assets as % of Sales	0.2	0.3	0.1	0.1	10.4%	9.4%	8.4%	7.4%	6.4%	5.4%
Other Funds as % of Sales	0.1	0.2	0.2	0.1	14.9%	14.9%	14.9%	14.9%	14.9%	14.9%



December 5, 2024

Students: Andrew Jacobe, Katherine Li, Tommy Rodriguez

Long: Lennox International (NYSE:LII)

Current Price: \$625 | **1Y Price Target:** \$766 (+23% upside)

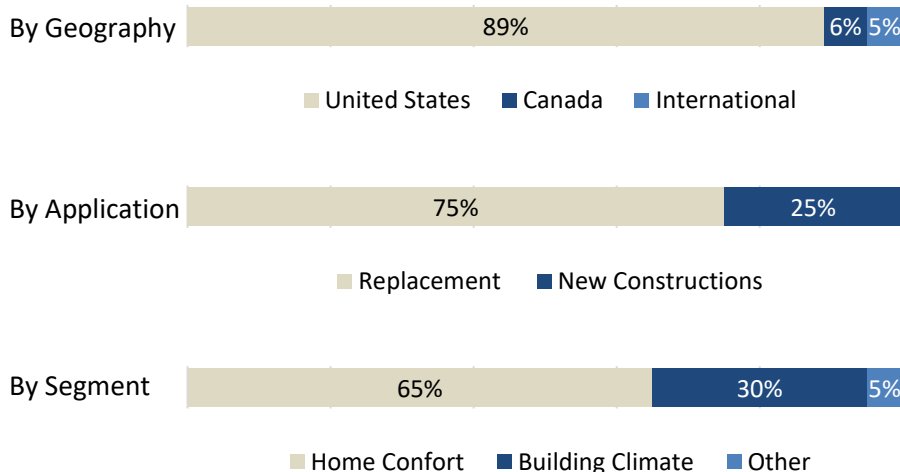
Lennox International (NYSE: LII) Overview

Industry Leading Provider of Construction Solutions for Residential and Commercial Markets

Company Description

- Leader in residential HVAC, top-tier growth and ROIC profile
- Offer top-tier solutions through various brand names: Lennox, Dave Lennox Signature, Armstrong, Ducane, Airease and others
- Two business segments: 15% market share in residential HVAC and 10% market share in commercial HVAC
- A unique channel strategy: self-owned distributor network of 245 Lennox Stores across the United States and Canada
- Founded in 1895, headquartered in Richardson, TX and employs ~12,500 employees

Revenue Breakdown

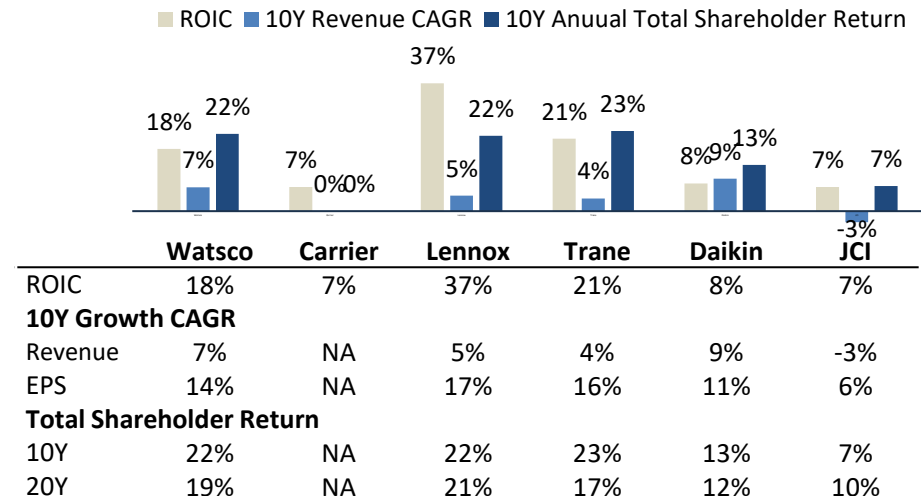


Key Financials and Trading Statistics

(\$ in millions, unless otherwise stated)

Current Price	\$625.35	52 Week Range	\$397 - \$653
Market Cap	\$22,277	25 P/E (x)	25x
Enterprise Value	\$23,444	EV/25 EBITDA (x)	19x
25E Revenue	\$5,592	Dividend Yield (%)	0.7%
25E NI	\$872	FCF Yield (%)	2.8%
ROE (%)	508%	Net Leverage (x)	1.1x
ROIC (%)	37%	Avg. Volume (mm)	0.27
25E GM (%)	33.0%	Float (%)	89.6%
EBITDA Margin (%)	21.0%	Short Interest (%)	2.9%

An Outlier in HVAC: LT High Quality Growth



Investment Overview

Lennox is best positioned HVAC player to expand market share and profitability

Investment Theses

Thesis 1: Competitive advantage as both an OEM and distributor enables outsized market share gain

- ✓ Lennox is best positioned as both an OEM and a distributor to further capture share through stronger customer relationships and insights into contractor demand
- ✓ Expanding production and e-commerce capacity to capture fickle lower tier customers who prioritize availability
- ✓ Superior customer service to capture and retain higher end sticky customers

Thesis 2: Expanding product offering to drive price and volume

- ✓ Expanding SKU potential for both 3rd party offerings and Lennox brand to offset weakening demand for next year and boost topline growth
- ✓ Representing \$400-\$600mm opportunity in sales growth and higher incremental margins
- ✓ Partnership with Samsung to enhance end user experience, particularly for signature and elite products

Thesis 3: Strong upside potential in commercial HVAC market

- ✓ Business Climate Solutions segment will continue to increase as a share of total revenue
- ✓ Ramp up of Saltillo factory in 2025 will alleviate supply constraints and increase order fill rates
- ✓ Emergency replacement service is a significant growth opportunity

Thesis 1: Competitive Advantage as Both an OEM and A Distributor

Lennox is Best Positioned as Both an OEM and a Distributor in the Highly Attractive Residential HVAC Industry

Resi HVAC Industry Highly Attractive

Growing End Markets, Highly stable and Recurring revenue

- ✓ HVAC industry driven by **growing installation base** (2-3% unit volume growth in US over past 50 years and 2% price capture)
- ✓ Growth tied to **growing number of US households, increasing A/C square footage of homes** from applying mini-splits to basement/attic at current 90% household penetration ratio
- ✓ Majority of volumes sold are for replacement: **80% replacement / 20% new construction**); Current install base of 110mm units with 12 to 15 year average life of unit. **8mm units replaced each year**

Strong Pricing Power from Product and Service Nature

- ✓ **Pricing power:** Unit Selling by over 30% from 2019 to 2023
- ✓ **Easy price pass-throughs:** End customers pay the lump sum of labor and HVAC systems, thus insensitive to price
- ✓ **Important:** Homeowners prioritize a functioning HVAC
- ✓ **Service & warranty:** High urgency to repair/replace HVAC, especially during summer and winter

HVAC Value Chain Overview (Residential): Lennox Uniquely Positioned as Both an OEM and a Distributor

We see long-term compounders arising from both OEM and distributors, both delivering excellent return profile with outstanding growth and quality. OEM benefits from the relative higher entry barrier aroused from economics of scale in manufacturing, resulting in a more concentrated landscape and much higher growth potential. Among them, Lennox is uniquely positioned because of a direct channel strategy

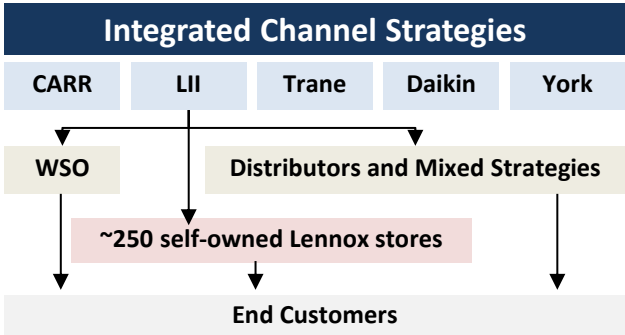
(USD Bn)

	Resi OEM					Distributors	Contractors Technicians	Homeowners Businesses		
Resi OEM	OEM	Carrier	Daikin	Trane	JCI	OEM + Distributor Lennox	Distributor Watsco	Distributor		
Market Share	Revenue	\$22.0	\$29.0	\$17.7	\$26.8	Revenue	\$5.0	Revenue	\$7.3	Market Share
Carrier 21%	Market Cap	\$56.7	\$43.0	\$73.3	\$47.2	Market Cap	\$19.2	Market Cap	\$17.8	Watsco 11%
Daikin 20%	Resi Mkt Share	21%	20%	14%	13%	Resi Mkt Share	15%	Resi Mkt Share	11%	OEMs 11%
Lennox 15%	ROE	13%	11%	34%	11%	ROE	508%	ROE	23%	Johnstone 6%
Trane 14%	ROIC	7%	8%	21%	7%	ROIC	37%	ROIC	18%	Ferguson 5%
JCI(York) 13%	ROA	4%	5%	10%	4%	ROA	19%	ROA	11%	Others 67%
Others 10%	GM%	29%	34%	33%	34%	GM%	31%	GM%	27%	
Mkt Concentration	NI%	6%	6%	12%	7%	NI%	12%	NI%	9%	Mkt Concentration
Top1 21%	Sales 10Y CAGR	-1%	9%	4%	-3%	Sales 10Y CAGR	5%	Sales 10Y CAGR	7%	Top1 11%
Top3 56%	EPS 10Y CAGR	N/A	11%	16%	6%	EPS 10Y CAGR	17%	EPS 10Y CAGR	14%	Top3 28%
Top5 83%	TSR 10Y CAGR	N/A	13%	23%	7%	TSR 10Y CAGR	22%	TSR 10Y CAGR	22%	Top5 36%

Thesis 1: Competitive Advantage as Both an OEM and A Distributor

Lennox Sets Up Well to Further Capture Share Through Stronger Relationships, Service, and Insights Into Contractors

As an OEM and distributor, Lennox can leverage two-way communication between factories and customers to boost efficiency in inventory management while meeting customer demand.



Share Gain Through End-to-End Insights

- ✓ **End customer insights & relationships:** Transparency on product availability, enhanced by partnership with Contractor Commerce
- ✓ **Higher manufacturing efficiency:** with insights, contribute to margin expansion
- ✓ **Better Inventory & distribution:** higher distribution fill rates through investments in digital inventory and distribution planning

Channel Check Findings

Conversations with distribution site employees, customers and competitors highlight Lennox's exceptional service, ability to capture and retain sticky customers

Observations:

- Lennox is a **service driven** business
- **For contractors:** client service and reliability are as important as price
- One new customer can result in **10% growth** for a Lennox store.
- Customers are loyal & know employees **on a first name basis**
- **Higher end** customers are **stickier**

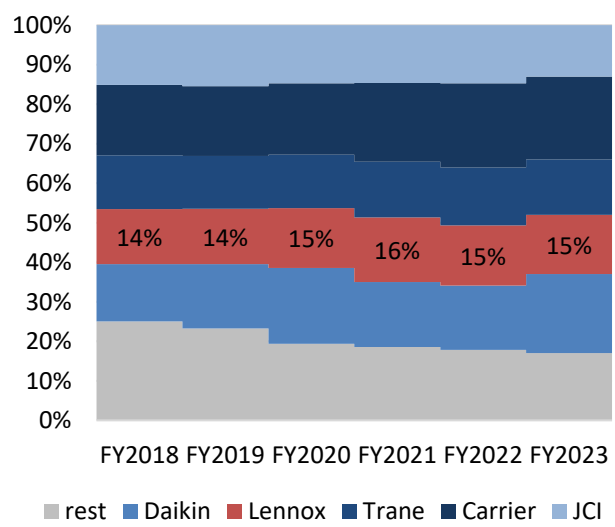
Commentary:

- One contractor who covers New York, New Jersey and Pennsylvania goes out of his way to work with one specific Lennox distribution center specifically **because of their superior customer service**
- Employees note that a significant number of their customers **moved over from Trane because of poor customer service** or from Carrier because of supply chain issues

Lennox-Contractor Commerce Partnership

- ✓ **Premier Dealer network:** Exclusive e-commerce capabilities, including transparent pricing for HVAC systems and filter subscription services that benefit both homeowners and dealers
- ✓ **Customers:** Purchase Lennox filters and subscribe to regular deliveries, ensuring the right filter is available at the right time
- ✓ **Homeowners:** will also be able to look up system estimates, allowing dealers to display their own individual pricing, enabling consumers to compare options and purchase directly from dealers' websites or online filter stores.

LII Steadily Gained Share Organically



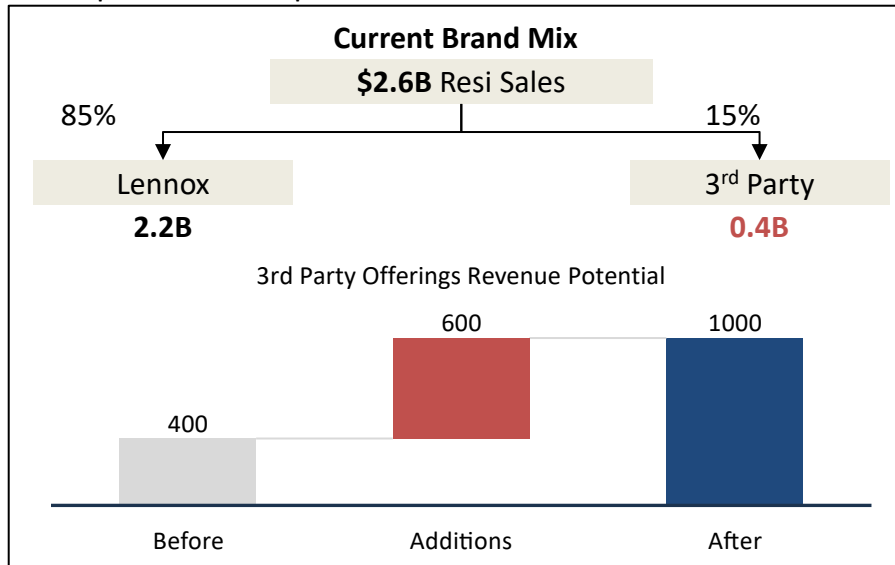
Thesis 2: Expanding Product Offerings to Boost Sales and Margins

Expanding 3rd Party SKU Offerings and Lennox Brand to Offset Weakening Demand for Next Year

Expanding 3rd Party Product Offerings within Channel

With better customer loyalty, further cross-selling opportunity of 3rd party offerings to expand asset utilization and drive sales volume and incremental margins

- ✓ Lennox owns ~250 distribution centers from which it derives ~75% of residential sales (~\$2.6bn)
- ✓ ~85% of the products sold are Lennox branded
- ✓ Management will expand its 3rd party SKU offering to 30% to 40% similar to other premier distribution companies, representing a \$400-\$600mm revenue opportunity
- ✓ Third parties benefit from Lennox's leading distribution capabilities and presence

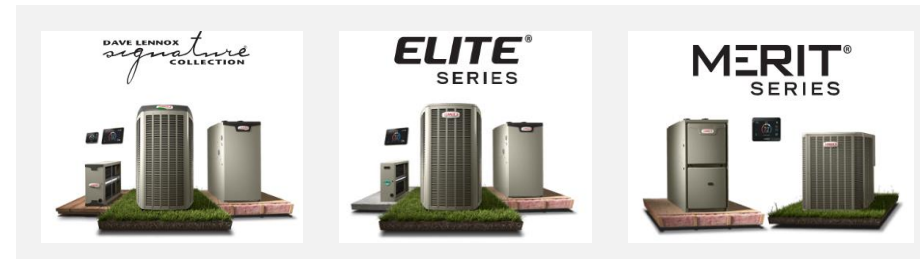


Strategic Partnership to Drive Product Innovation

Strategic partnership to drive product innovation

- Joint venture with Samsung to deliver its ductless products in North America as well as “Lennox powered by Samsung”-branded products, which will be sold through Lennox stores and direct-to-dealer network.
- Samsung expects the joint venture will help the company to strengthen its position in the North American HVAC market by adding Lennox’s distribution channels, while Lennox is expected to reinforce its business by **expanding the product lineup of innovative ductless systems**
- Homeowners can monitor power consumption and on save energy consumption

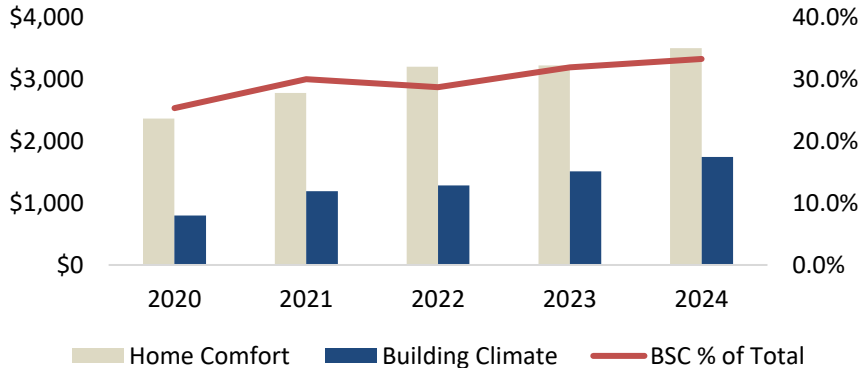
Lennox Product Lines



Thesis 3: Strong Topline Potential in Commercial HVAC Market

Management's Strategic Initiatives and Ability to Execute will Bolster Lennox's Commercial Business

Lennox Revenue Breakdown (\$MM)



	2yr CAGR	4yr CAGR
Home Comfort	4.58%	10.32%
Building Climate	16.42%	21.47%

- ✓ **Business Climate Solutions segment will continue to increase as a share of total revenue**
- ✓ **Lennox's largest factory is set to fully ramp up in 2025 with a focus on its commercial products**
 - ✓ Relieve supply constraints and increase order fill rates
- ✓ **Emergency replacement service is a significant growth opportunity**
 - ✓ Lennox's commercial business consists of 90% key accounts / 10% emergency replacement vs. 60% / 40% split across the industry

2023 Acquisition of AES

Key Capabilities



Installation Services

Increases capacity for **National Account turn-key installations** and enhances **cross-selling**



Refrigerant Reclaim & Recycle Materials

Provides **new services** to facilitate product life cycle decommissioning



Replacement Accessories

Vertically integrated **curb manufacturing** enables share gain and margin improvements

2025 Ramp of Lennox's Largest Factory



Conclusion

12-Month Price Target of \$766 in Base Case with +23% Upside

Valuation Summary: 2025 Target Price

		Base	Bull	Bear
PE Multiple	2026 EPS	\$28.01	\$32.78	\$24.56
	Forward P/E	26.5x	26.5x	22.5x
	Target Price	\$742.35	\$868.77	\$552.55
EV/EBITDA Multiple	2026 EBITDA	\$1,366	\$1,575	\$1,214
	Forward EV/EBITDA	20.0x	20.0x	16.5x
	Enterprise Value	\$27,322	\$31,495	\$20,028
	Debt	\$1,342	\$1,347	\$1,340
	Cash	\$623	\$549	\$591
	Market Cap	\$28,042	\$32,293	\$20,776
	FDSO	35.5	35.4	35.5
	Target Price	\$789.87	\$913.45	\$585.21
Returns	Avg. Target Price	\$766.11	\$891.11	\$568.88
	Current Price	\$625.35	\$625.35	\$625.35
	Upside/(Downside)	22.5%	42.5%	(9.0%)
	(+) Dividends	\$4.83	\$4.95	\$4.72
	Total Return	23.3%	43.3%	(8.3%)

- ✓ Valuation applies forward P/E and EV/EBITDA and multiples determine price targets across the three different cases
- ✓ **Base case incorporates:**
 - 20.0x 2026 EBITDA of \$1,366mm, above its 10-year average of 15.2x.
 - 1.3x relative EBITDA multiple, in-line with its 10-yr average
 - 26.5x 2026 EPS of \$28.01, above its 10-year average of 21.0x
 - 1.19x relative P/E multiple, in-line with its 10-yr average
- ✓ Price target supported by DCF which incorporates 9% WACC, 5% growth, and 20x exit multiple

Comparison to Consensus

	2024			2025			2026		
	Forecast	Consensus	% Diff.	Forecast	Consensus	% Diff.	Forecast	Consensus	% Diff.
Revenue	\$5,263	\$5,219	0.8%	\$5,643	\$5,585	1.0%	\$6,121	\$5,945	3.0%
% Growth	5.6%	4.8%		7.2%	7.0%		8.5%	6.5%	
Gross Profit	\$1,735	\$1,710	1.5%	\$1,862	\$1,841	1.1%	\$2,035	\$2,002	1.7%
% Margin	33.0%	32.8%	0.2%	33.0%	33.0%	0.0%	33.3%	33.7%	(0.4%)
EBIT	\$1,016	\$986	3.0%	\$1,122	\$1,085	3.4%	\$1,256	\$1,191	5.4%
% Margin	19.3%	18.9%	0.4%	19.9%	19.4%	0.5%	20.5%	20.0%	0.5%
EBITDA	\$1,109	\$1,074	3.2%	\$1,224	\$1,171	4.5%	\$1,366	\$1,275	7.1%
% Margin	21.1%	20.6%	0.5%	21.7%	21.0%	0.7%	22.3%	21.4%	0.9%
EPS	\$21.90	\$21.06	4.0%	\$24.57	\$23.36	5.2%	\$28.01	\$25.90	8.2%

Appendix

Appendix – Forecast Detail

\$ in Millions	Base Case						Bull Case					Bear Case				
	2024	2025	2026	2027	2028	CAGR	2025	2026	2027	2028	CAGR	2025	2026	2027	2028	CAGR
Revenue	5,263	5,643	6,121	6,564	7,073	7.7%	5,958	6,821	7,724	8,786	13.7%	5,485	5,785	6,030	6,317	4.7%
% Growth	5.6%	7.2%	8.5%	7.2%	7.8%		13.2%	14.5%	13.2%	13.7%		4.2%	5.5%	4.2%	4.8%	
COGS	3,528	3,781	4,086	4,381	4,703	7.4%	3,992	4,536	5,136	5,820	13.3%	3,702	3,934	4,100	4,295	5.0%
Gross Profit	1,735	1,862	2,035	2,182	2,369	8.1%	1,966	2,285	2,587	2,965	14.3%	1,783	1,851	1,930	2,021	3.9%
% Margin	33.0%	33.0%	33.3%	33.3%	33.5%		33.0%	33.5%	33.5%	33.8%		32.5%	32.0%	32.0%	32.0%	
Opex	626	639	669	691	727	3.8%	649	710	752	814	6.8%	628	638	673	709	3.2%
EBITDA	1,109	1,224	1,366	1,491	1,643	10.3%	1,318	1,575	1,836	2,151	18.0%	1,154	1,214	1,256	1,313	4.3%
% Margin	21.1%	21.7%	22.3%	22.7%	23.2%		22.1%	23.1%	23.8%	24.5%		21.0%	21.0%	20.8%	20.8%	
D&A	92	102	110	118	127	8.3%	107	123	139	158	14.4%	99	104	109	114	5.3%
EBIT	1,016	1,122	1,256	1,373	1,515	10.5%	1,210	1,452	1,697	1,993	18.3%	1,056	1,110	1,148	1,199	4.2%
% Margin	19.3%	19.9%	20.5%	20.9%	21.4%		20.3%	21.3%	22.0%	22.7%		19.2%	19.2%	19.0%	19.0%	
Interest Exp.	42	39	35	32	28	(9.5%)	39	35	32	28	(9.5%)	39	35	32	28	(9.5%)
Taxes & Other	190	211	237	261	289	11.0%	228	275	323	381	18.9%	198	209	217	228	4.6%
Net Income	784	872	983	1,081	1,198	11.2%	944	1,142	1,342	1,584	19.2%	819	865	899	943	4.7%
% Margin	14.9%	15.5%	16.1%	16.5%	16.9%		15.8%	16.7%	17.4%	18.0%		14.9%	15.0%	14.9%	14.9%	
FDSO	36	36	35	35	34	(1.2%)	35	35	34	34	(1.6%)	36	35	35	35	(0.7%)
Diluted Eps	21.90	24.57	28.01	31.22	35.14	12.6%	26.69	32.78	39.21	47.16	21.1%	23.06	24.56	25.68	27.11	5.5%
Capex	136	149	161	173	186	8.1%	157	180	204	232	14.1%	145	152	159	167	5.1%
Free Cash Flow ⁽¹⁾	782	864	968	1,058	1,167	10.5%	933	1,120	1,309	1,539	18.4%	812	852	880	919	4.1%
% Conversion	70.5%	70.6%	70.8%	70.9%	71.1%		70.8%	71.1%	71.3%	71.5%		70.3%	70.2%	70.1%	70.0%	
Dividends	160	172	179	185	192	4.6%	176	186	197	208	6.7%	168	171	174	177	2.5%

(1) FCF equals EBITDA minus taxes minus capex.

Appendix – Discounted Cash Flow

	Company data (\$M, FY-end Dec)									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Revenue	3,634	4,194	4,718	4,982	5,263	5,643	6,121	6,564	7,073	7,775
<i>y/y growth</i>	-3.7%	15.4%	12.5%	5.6%	5.6%	7.2%	8.5%	7.2%	7.8%	9.9%
Gross Profit	1,040	1,189	1,285	1,548	1,735	1,862	2,035	2,182	2,369	2,605
<i>margin</i>	28.6%	28.3%	27.2%	31.1%	33.0%	33.0%	33.3%	33.3%	33.5%	33.5%
Operating Income (EBIT)	506	604	666	857	1,016	1,122	1,256	1,373	1,515	1,711
<i>margin</i>	13.9%	14.4%	14.1%	17.2%	19.3%	19.9%	20.5%	20.9%	21.4%	22.0%
Taxes	-90	-103	-122	-148	-188	-209	-235	-259	-287	-325
NOPAT	416	501	545	709	828	913	1,021	1,115	1,229	1,386
+ D&A	73	72	78	86	92	102	110	118	127	140
- Capex	-79	-107	-101	-250	-136	-149	-161	-173	-186	-205
+ / - Changes to working capital	142	-66	-269	-14	-107	-41	-55	-56	-41	-75
Unlevered FCF	268	532	790	559	892	907	1,024	1,116	1,210	1,396

Perpetuity Growth Method	
Weighted average cost of capital	8.9%
Net present value of free cash flow	\$5,650.12
Growth rate of FCF after 2029	5%
Terminal value	\$37,196
Present value of terminal value	\$24,242
Enterprise value	\$29,892
Less net debt	\$1,115
Equity value	\$28,777
Diluted shares	35.8
Equity value per share	\$803.83
% upside / downside	28.54%

Multiple Method	
Weighted average cost of capital	8.9%
Net present value of free cash flow	\$5,650.12
Exit Multiple	20.0x
Terminal value	\$34,223
Present value of terminal value	\$22,304
Enterprise value	\$27,954
Less net debt	\$1,115
Equity value	\$26,839
Diluted shares	35.8
Equity value per share	\$749.69
% upside / downside	19.88%

(1) FCF equals EBITDA minus taxes minus capex.

1. Volumes decline as end-market demand weakens

- ✓ **Mitigant:** Lennox's strategic initiatives position the company to continue to grow on both an absolute and relative basis. As Lennox expands its 3rd party SKU offers, it will enhance volume on the residential side despite expected volume declines across the industry. Lennox is less exposed to the commercial end market relative to peers and is experiencing supply constraints that will be alleviated next year, bolstering growth within the commercial segment.

2. Share gain reversal

- ✓ **Mitigant:** Lennox saw recent share gain partly as a result of good inventory management during the refrigerator transition. Lennox will retain these customers because of its superior client service and e-commerce initiative to improve meeting demand in a timely manner, particularly for fickle customers. Contractors can often take years before switching lead providers, and as Lennox improves on fill rates it will retain these customers.

3. Supply constraints, particularly on the commercial side, are prolonged

- ✓ **Mitigant:** Lennox is focused on fully ramping its new Saltillo factory to address demand within the commercial end-market. Lennox is on track to overcome inefficiencies and have this facility fully operational in 2025.

Appendix – Value Added Research Summary

Expert Calls/Tegus

- Former director, field marketing at Lennox
- Former head of marketing at Lennox
- Former member of European executive committee at Lennox
- Former VP of Lennox stores, NA
- President and CEO HVAC Distributors

Channel Checks

- Lennox store located in New Jersey
- Trane store located in New Jersey
- Two independent contractors with over 20 years of experience



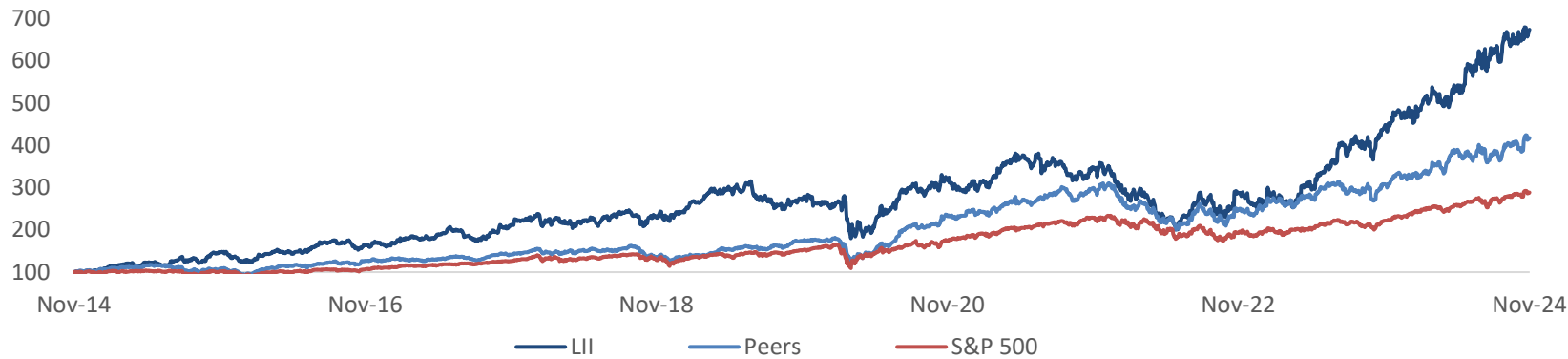
Valuation Summary – Multiples Today

	Market Cap	Enterprise Value	Forward PE		Forward EV/EBITDA		Gross Margin	EBITDA Margin	Operating		Hist 3yr Rev. Growth	FWD. 2yr EPS Growth	Price/FCF	Net Leverage (x)	
			2025	2026	2025	2026			Margin	ROIC					ROA
Trane Technologies plc	92,521	95,885	32.5x	29.0x	22.8x	20.8x	35.3%	19.0%	17.3%	19.5%	11.0%	11.7%	12.8%	36.1x	1.4x
Carrier Global Corporation	66,843	77,844	24.6x	21.3x	16.4x	15.3x	28.3%	13.4%	9.0%	7.8%	4.9%	3.0%	18.0%	na	2.8x
Johnson Controls International plc	54,948	66,308	23.8x	20.1x	17.6x	15.8x	35.2%	14.3%	10.7%	8.0%	3.5%	4.9%	6.0%	34.3x	2.4x
Daikin Industries,Ltd.	34,503	34,651	20.3x	18.2x	8.4x	7.9x	34.0%	13.6%	8.6%	8.6%	5.9%	7.9%	6.4%	45.1x	1.5x
Ferguson Enterprises Inc.	40,698	45,644	20.7x	18.3x	14.9x	13.5x	30.5%	10.0%	8.9%	18.9%	10.7%	9.3%	7.4%	23.0x	1.8x
Watsco, Inc.	20,004	20,348	36.3x	32.5x	22.1x	20.0x	26.7%	10.2%	9.7%	21.8%	17.6%	6.2%	11.8%	34.3x	0.5x
Peer Group Average.	51,586	56,780	26.4x	23.2x	17.0x	15.5x	31.7%	13.4%	10.7%	14.1%	8.9%	7.2%	10.4%	34.5x	1.7x
Peer Group Median	47,823	55,976	24.2x	20.7x	17.0x	15.5x	32.3%	13.5%	9.3%	13.7%	8.3%	7.0%	9.6%	34.3x	1.6x
Lennox International Inc.	22,277	23,444	26.8x	24.2x	20.0x	18.7x	32.4%	20.5%	18.7%	44.0%	22.0%	7.6%	10.9%	36.1x	1.3x

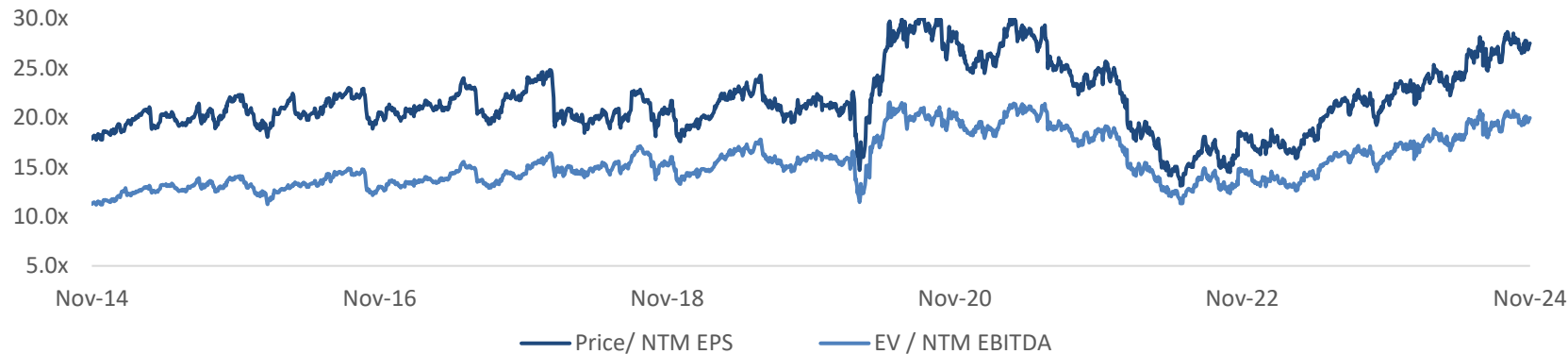
Lennox trades at a slightly premium to peer set which is justified by its higher margins and stronger operating metrics

Appendix - Trading History

Share Price Performance
(Indexed to 100)



Forward Trading Multiples
(P/EPS & EV/EBITDA)



	Price / NTM EPS					EV / NTM EBITDA				
	Current	LTM.	L3Y	L5Y	LY10	Current	LTM.	L3Y	L5Y	LY10
LII	\$27.51	\$24.92	\$20.67	\$22.60	\$21.69	\$19.95	\$18.37	\$15.87	\$16.97	\$15.54
Peer Group	\$26.72	\$23.57	\$20.48	\$22.09	\$19.51	\$17.11	\$15.10	\$13.87	\$14.30	\$12.30
<i>SSD Prem/(Disc)</i>	3.0%	5.7%	0.9%	2.3%	11.2%	16.6%	21.6%	14.4%	18.6%	26.3%
S&P 500	\$22.71	\$21.43	\$19.62	\$20.55	\$18.94	\$15.08	\$14.21	\$12.94	\$13.22	\$11.81
<i>SSD Prem/(Disc)</i>	21.2%	16.3%	5.4%	10.0%	14.6%	32.3%	29.3%	22.7%	28.4%	31.6%

Source: Capital IQ. Pricing as of 11/20/2024.
 Note: Peers reflect group on previous page.

Appendix – Key Management Overview



Alok Maskara - CEO

- Only the eighth CEO of Lennox since the company was founded in 1895
- Prior to his role as Lennox, Alok served as CEO of Luxfer Holdings, an international industrial company focused on advanced materials
- Over 25 years of global leadership in manufacturing and technology to Lennox



Prakash Bedapudi - CTO

- Appointed Executive Vice President, Chief Technology Officer in July 2008
- Previously served as Vice President, Global Engineering and Program Management for Trane Inc.



Gary Bedard – EVP, Home Comfort Solutions

- Appointed Executive Vice President & President of the Lennox Home Comfort Solutions business in January 2023
- Recently, he served as Executive Vice President & President of the Lennox Worldwide Refrigeration business, a position he held since October 2017



Mary Ellen Mond – VP, Marketing/Comm.

- Joined Lennox as Vice President, Marketing and Communications in December 2022
- After starting her career in consulting with Booz Allen Hamilton, Ms. Mond spent 10 years at Emerson Electric working in several marketing roles eventually serving as Vice President, Marketing Communications & Digital Experience



Joe Nassab – EVP, Building Climate Solutions

- Appointed Executive Vice President and President and the Lennox Building Climate Solutions business on May 4, 2022
- Joined Lennox in 2010 as Vice President and General Manager of Allied Air



Michael Quenzer – CFO

- Appointed Executive Vice President and Chief Financial Officer in January 2024
- Joined Lennox in 2004 and has held key leadership roles including Vice President, Investor Relations and Financial Planning Analysis and Vice President of Finance for the Lennox Building Climate Solutions (Commercial) business segment

Appendix – Key Management Compensation Overview

Name and Principal Position	Year	Salary (\$)	Bonus \$(1)	Stock Awards (\$)	Option Awards (\$)	Non-Equity Incentive Plan Compensation (\$)	Change In Pension Value and Nonqualified Deferred Compensation Earnings \$(2)	All Other Compensation \$(3)	Total (\$)
Alok Maskara	2023	1,064,750	—	—	—	2,729,934	—	1,188,979	4,983,663
President and Chief Executive Officer	2022	667,792	1,000,000	6,708,818	971,133	472,476	—	277,560	10,097,779
Joseph W. Reitmeyer	2023	607,500	—	—	—	973,488	558,393	49,800	2,189,181
Executive Vice President and Chief Financial Officer	2022	580,000	—	1,150,071	291,334	248,141	—	48,319	2,317,865
Joseph F. Nassab	2021	560,000	—	1,394,261	215,660	816,614	644,276	47,476	3,678,287
Executive Vice President and President, Building Climate Solutions	2023	531,250	—	—	—	873,893	—	184,994	1,590,137
	2022	471,319	—	1,206,134	184,520	321,419	—	166,492	2,349,884
Daniel M. Sessa	2023	566,250	—	—	—	907,387	253,146	49,800	1,776,583
Executive Vice President and Chief Human Resources Officer	2022	551,250	—	861,746	223,373	304,703	—	48,324	2,009,396
John D. Torres	2021	536,250	—	1,394,261	215,660	781,981	338,549	62,967	3,329,668
Executive Vice President, Chief Legal Officer and Corporate Secretary	2023	547,500	—	—	—	877,341	273,516	49,800	1,748,157
Douglas L. Young	2022	536,250	—	843,238	213,627	237,130	—	48,418	1,878,663
Former Executive Vice President and President, Residential Heating & Cooling	2021	521,250	—	1,394,261	215,660	760,108	384,065	47,443	3,322,787
	2023	325,000	2,500,000	—	—	403,163	—	34,800	3,262,963
	2022	635,000	—	996,777	252,480	403,622	—	48,300	2,336,179
	2021	615,000	—	1,044,005	254,858	958,000	—	54,769	2,926,632

Name	2023 Summary Compensation Table Values				2023 "Normalized" Compensation	
	Salary	Short-term Incentive	2023 Long-Term Incentive	Total Compensation (1)	February 2024 Long-Term Incentive	Total Compensation (1)
Alok Maskara	\$ 1,064,750	\$ 2,729,934	\$ 0	\$ 4,983,663	\$ 5,700,000	\$ 10,683,663

- Short Term Incentive (“STI”) amounts are determined by Company performance against the net income (50%), cash flow (30%), and revenue(20%), as approved by the Committee
- Long Term Incentive (“LTI”) amounts 70% performance based and 30% timing based and are 50% ROIC and 50% Net Income
- Stock ownership guidelines for NEOs that mandate certain multiple of base salary (CEO 6x base salary, all others 3x base salary)
- In 2023, LII moved the LTI grant date to after the Q4 earnings release in the following year. This change is intended to align all of the comp discussions and further maximize our pay for performance philosophy – As such, no LTI’s were granted during 2023
- “Normalized” 2023 CEO comp reflects ~53% of total CEO comp in stock awards

Appendix – Products Overview

Residential HVAC

HEATING & COOLING

Furnaces
 View a complete line of Gas and Oil Furnaces engineered for perfect warmth and efficiency.



Air Conditioners
 See why Lennox® Air Conditioners are among the quietest and most energy-efficient units you can buy.




Heat Pumps
 Enjoy innovation in every season with precise, quietly efficient Lennox® Heat Pumps.



Packaged Units
 Choose Lennox® Packaged Units when you need a self-contained heating and cooling system that installs outside.




Air Handlers
 See why Lennox® Air Handlers are among the most efficient and quietest you can buy.



Boilers
 Browse our selection of Boilers, designed to integrate easily with existing radiator or under-floor heating systems.



Garage Heaters
 Explore solutions for making your garage or workspace more comfortable.



Mini-Split Systems
 Explore the versatility of Mini-Split Systems, ideal for spaces like add-on rooms.



INDOOR AIR QUALITY

Air Purification
 Control allergens and other contaminants with air purification and filtration systems.



Humidity Control
 Keep humidity at a comfortable level, usually between 30% and 60%, with whole-home humidifiers and dehumidifiers.




Ventilation
 Choose a whole-home ventilation system to bring fresh air into your living spaces, without wasting energy.



COMFORT CONTROLS

Thermostats
 Choose from a complete line of programmable and smart thermostats—all designed to maximize the efficiency of Lennox® heating and cooling systems.



Zoning
 Explore zoning systems that save you the expense of heating or cooling areas of your home that are rarely used.



Commercial HVAC



Model L™



Elite® Series Large Split Systems ELXC/ELXP



Elite® Series Large Air Handler ELXA



VRB Heat Recovery



VPB Heat Pump



Single-Zone Heat Pump



Multi-Zone Heat Pump

Appendix – Top Shareholders

Latest Holders														
Holder	Common Stock Equivalent Held	% Of CSO	Market Value (USD in mm)	Change in Shares	% Change	Position Date	Source	Portfolio Turnover Category	Portfolio Turnover (%)	Investment Orientation	Calculated Investment Style	Market Cap Emphasis	Owner Type	
BlackRock, Inc. (NYSE:BLK)	3,702,419	10.393	2,293.1	-	0.00	Jun-30-2024	13F	Very Low	5.86	Passive	Growth	Large cap	Traditional Investment Managers	
The Vanguard Group, Inc.	3,239,543	9.094	2,006.4	(14,878)	(0.46)	Sep-30-2024	13F	Very Low	2.48	Passive	Growth	Large cap	Traditional Investment Managers	
Norris Family Limited Partnership	2,545,105	7.145	1,576.3	-	0.00	Nov-12-2024	Form 4	-	-	-	Unclassified	Unclassified	Corporations (Private)	
Kayne Anderson Rudnick Investment Management, LLC	1,702,997	4.781	1,054.7	38,412	2.31	Sep-30-2024	13F	Very Low	15.87	Active	Growth	Multi cap	Traditional Investment Managers	
Eaton Vance Management	1,221,216	3.428	756.3	-	0.00	Sep-30-2024	Aggregated 13F	Very Low	10.20	Active	Growth	Large cap	Traditional Investment Managers	
State Street Global Advisors, Inc.	1,204,620	3.382	746.1	-	0.00	Jun-30-2024	13F	Very Low	4.15	Passive	Growth	Large cap	Traditional Investment Managers	
Capital Research and Management Company	771,570	2.166	477.9	65,790	9.32	Sep-30-2024	Aggregated 13F	Very Low	18.37	Active	Growth	Large cap	Traditional Investment Managers	
Norges Bank Investment Management	574,129	1.612	355.6	-	0.00	Jun-30-2024	13F	Very Low	8.38	Active	Growth	Large cap	Government Pension Sponsors	
Geode Capital Management, LLC	571,095	1.603	353.7	12,183	2.18	Sep-30-2024	13F	Very Low	2.17	Passive	Growth	Large cap	Traditional Investment Managers	
Fisher Asset Management, LLC	535,171	1.502	331.5	27,306	5.38	Sep-30-2024	13F	Very Low	14.64	Active	Growth	Large cap	Traditional Investment Managers	
Wellington Management Group LLP	532,906	1.496	330.1	-	0.00	Jun-30-2024	13F	Low	22.52	Active	Growth	Large cap	Traditional Investment Managers	
The London Company of Virginia, LLC	379,452	1.065	235.0	-	0.00	Jun-30-2024	13F	Very Low	10.31	Active	Growth	Large cap	Traditional Investment Managers	
BNY Asset Management	296,804	0.833	183.8	(41,177)	(12.18)	Sep-30-2024	13F	Very Low	8.24	Active	Growth	Large cap	Traditional Investment Managers	
Wells Fargo & Company, Securities and Brokerage Investments	286,182	0.803	177.2	8,718	3.14	Sep-30-2024	13F	Very Low	11.77	Active	Growth	Large cap	Banks/Investment Banks	
Millennium Management LLC	273,632	0.768	169.5	-	0.00	Jun-30-2024	Aggregated 13F	High	127.61	Active	Growth	Large cap	Hedge Fund Managers (<5% stake)	
Dimensional Fund Advisors LP	272,393	0.765	168.7	13,333	5.15	Sep-30-2024	13F	Very Low	8.63	Active	GARP	Large cap	Traditional Investment Managers	
UBS Asset Management AG	271,236	0.761	168.0	-	0.00	Jun-30-2024	Aggregated 13F	Very Low	14.40	Active	Growth	Large cap	Traditional Investment Managers	
AllianceBernstein L.P.	264,931	0.744	164.1	-	0.00	Jun-30-2024	13F	Very Low	18.32	Active	Growth	Large cap	Traditional Investment Managers	
Seven Post Investment Office LP	247,076	0.694	153.0	-	0.00	Sep-30-2024	13F	Very Low	5.16	Active	Growth	Large cap	Traditional Investment Managers	
Northern Trust Global Investments	246,692	0.693	152.8	(10,933)	(4.24)	Sep-30-2024	13F	Very Low	4.73	Active	Growth	Large cap	Traditional Investment Managers	
Kodal Capital Management, L.P.	246,108	0.691	152.4	-	0.00	Jun-30-2024	13F	-	-	-	Growth	Large cap	Hedge Fund Managers (<5% stake)	



ALPHA  **CHALLENGE**
Kenan-Flagler Business School
The University of North Carolina

December 5, 2024

Team Number: 4

Students: Hannah Kimmel, Josh Baldwin, and Chris Coolidge

Executive Summary

CTV resurgence, breaking walled gardens, financials play up multiple



Premium CTV deals with Disney+ and Netflix will deliver accretion to revenue growth



DOJ Anti-trust trial against Google to open new TAMs and deliver additional EBITDA



Premium inventory, improving financials, margin expansion play up multiple



BUY

PT: \$22

28%

Upside

Company Overview

Leader in digital advertising solutions



Largest sell-side omnichannel digital advertising platform (SSP) helping publishers manage and monetize digital ad inventory



Platform connects digital media owners with advertisers offering transparent, data-driven, automated ad transactions at scale

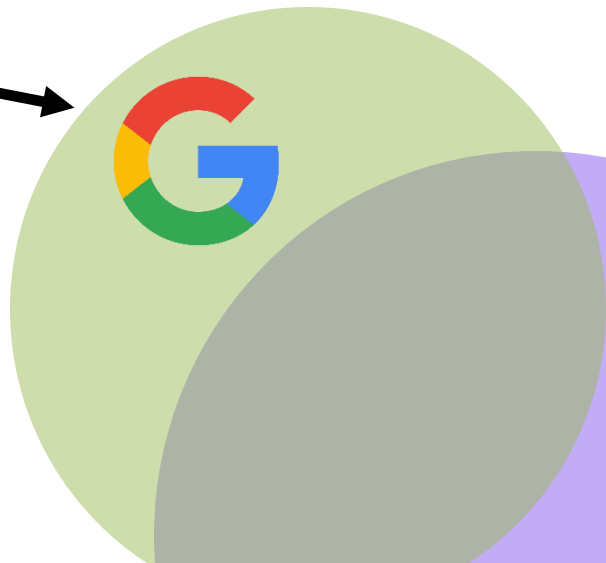


Suite of programmatic tools for publishers to optimize ad placements for target audiences

Industry Overview

\$600 Billion Programmatic Digital Advertising Industry

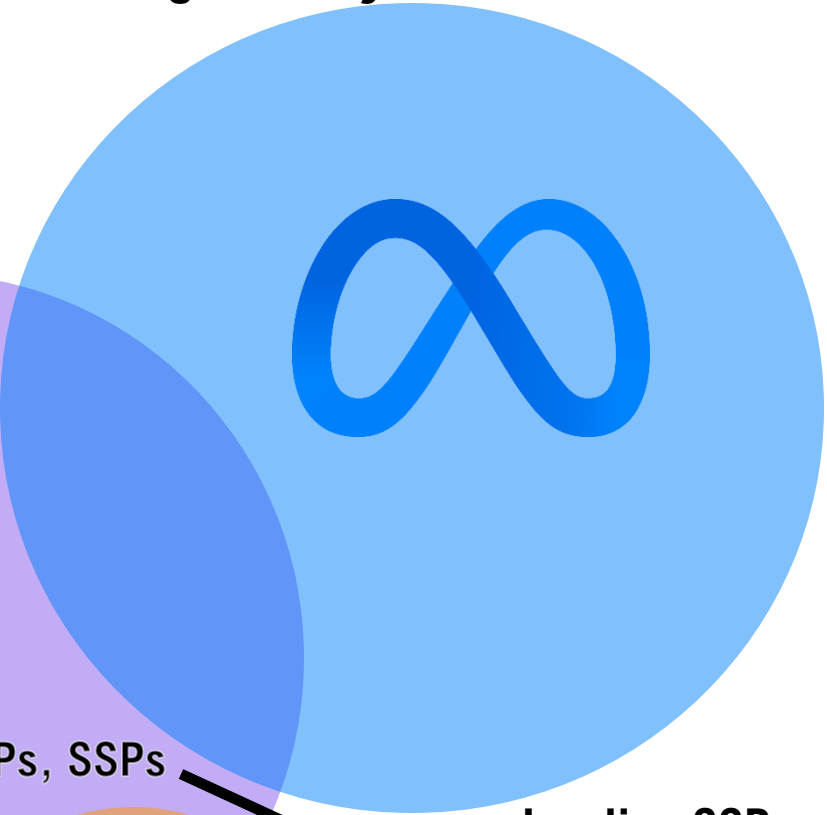
Walled Gardens



The Open Internet

The Challenger Gardens

Ad Exchanges, DSPs, SSPs
\$180B TAM



Leading SSPs

- Magnite
- OpenX.
- PubMatic
- TRITON
- Google Ad Manager
- Microsoft | Advertising

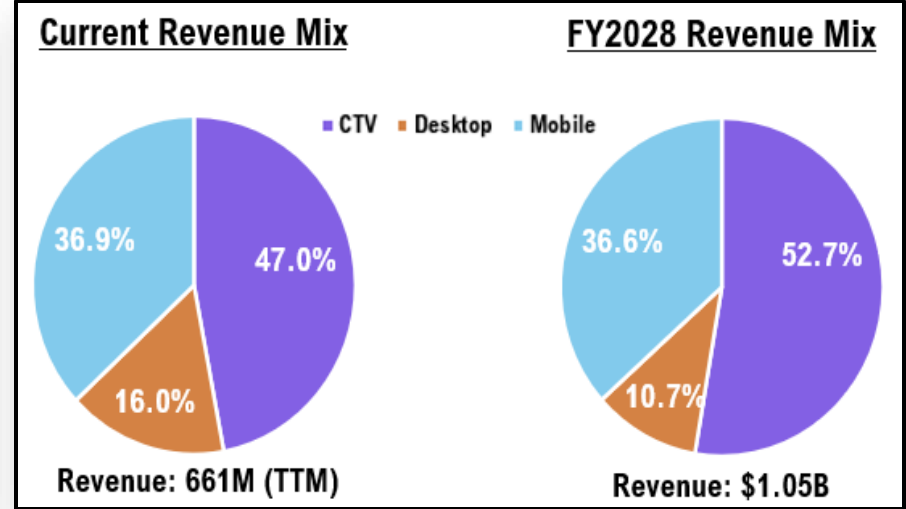
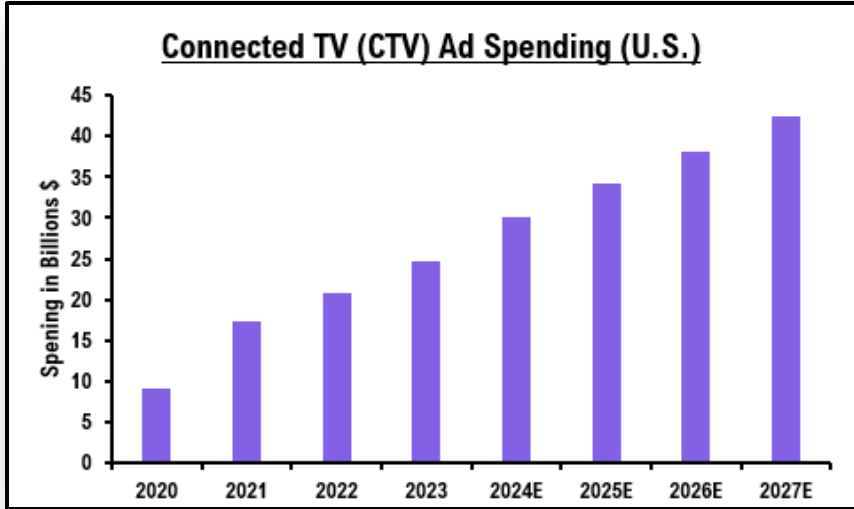
Industry Overview

Largest Independent SSP | 25% U.S. Market Share



Netflix & Disney+ CTV Ad Deals

CTV Market Resurgence, CTV Deals to deliver revenue accretion



...Favorable revenue mix shift to support CTV ad demand...



...Recent partnership wins...

Netflix & Disney+ CTV Ad Deals

CTV revenue accretion drives us ahead of market expectations



MGNI Disney+ Revenue Contribution Estimate

\$millions, except per share figures

	2023A	2024E	2025E	2026E	2027E	2028E
BoP: Total Disney Streaming Ad-tier Subs	96.6	101.0	118.7	127.3	133.6	139.8
(+) New Ad-tier Subs	4.4	17.6	8.6	6.3	6.1	6.9
EoP: Total Disney Streaming Ad-tier Subs	101.0	118.7	127.3	133.6	139.8	146.7
YoY (%)		17.4%	7.3%	5.0%	4.6%	5.0%
Average Ad-tier Subs	98.8	109.8	123.0	130.4	136.7	143.2
(x) Time Spent / Day (Hours)	0.57	0.57	0.57	0.57	0.57	0.57
(x) # of Days	365	366	365	365	365	366
(=) Total Time Spent	20,437	22,781	25,432	26,980	28,271	29,703
(x) # of Ads / Hour (30s)	8.0	8.0	8.0	8.0	8.0	8.0
(=) # of Impressions Available	163,495	182,247	203,460	215,840	226,166	237,625
(x) Fill Rate	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
(x) CPM	45.00	45.00	45.00	45.00	45.00	45.00
(/) 1,000	1,000	1,000	1,000	1,000	1,000	1,000
(=) Disney Advertising Revenue	4,414	4,921	5,493	5,828	6,106	6,416
Implied Avg. Revenue per Ad-tier Sub	43.69	41.47	43.16	43.62	43.70	43.74
Disney Advertising Revenue	4,414	4,921	5,493	5,828	6,106	6,416
(x) % Sold Programmatically (DSPs)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
(=) Netflix Programmatic Ads Revenue	4,414	4,921	5,493	5,828	6,106	6,416
(x) MGNI Take-Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
(=) MGNI Disney Partnership Revenue	132.4	147.6	164.8	174.8	183.2	192.5
Accretion to MGNI Revenue Growth	0.00%	27.84%	28.09%	26.58%	24.44%	22.54%
% of MGNI Revenue	21.37%	21.78%	21.93%	21.00%	19.64%	18.39%

MGNI Netflix Revenue Contribution Estimate

\$millions, except per sub figures

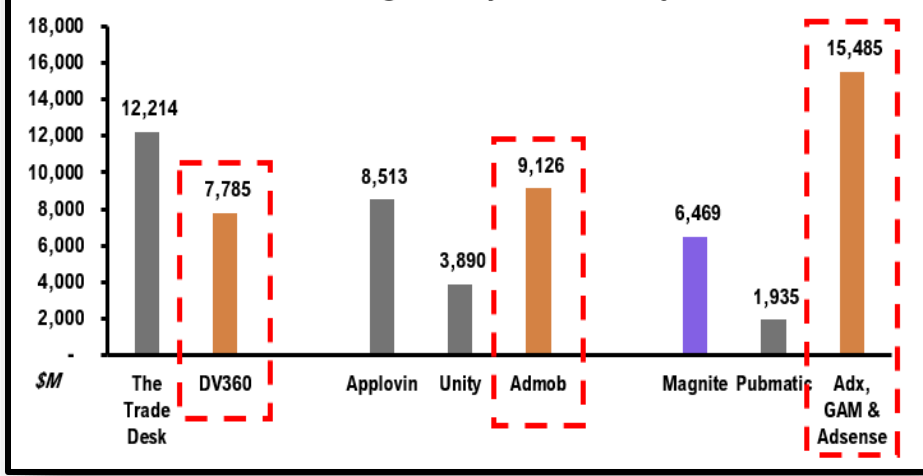
	2023A	2024E	2025E	2026E	2027E	2028E
BoP: NFLX Ad-tier Subs	1.0	10.5	30.2	42.6	54.6	65.9
(+) New Ad-tier Subs	9.5	19.7	12.4	12.0	11.3	10.9
EoP: NFLX Ad-tier Subs	10.5	30.2	42.6	54.6	65.9	76.8
YoY (%)		187.6%	40.9%	28.3%	20.7%	16.5%
Average Ad-tier Subs	5.8	20.4	36.4	48.6	60.3	71.4
(x) Time Spent / Day (Hours)	1.55	1.57	1.57	1.57	1.57	1.57
(x) # of Days	365	366	365	365	365	366
(=) Total Time Spent	3,253	11,669	20,805	27,782	34,462	40,916
(x) # of Ads / Hour (30s)	8.0	8.0	8.0	8.0	8.0	8.0
(=) # of Impressions Available	26,025	93,353	166,438	222,255	275,694	327,325
(x) Fill Rate	48.8%	41.3%	43.6%	52.5%	57.5%	57.5%
(x) CPM	41.80	34.13	31.75	27.00	27.00	27.00
(/) 1,000	1,000	1,000	1,000	1,000	1,000	1,000
(=) Netflix Advertising Revenue	531	1,316	2,304	3,150	4,280	5,082
Implied Avg. Revenue per Ad-tier Sub	50.56	43.57	54.13	57.70	64.92	66.18
Netflix Advertising Revenue	531	1,316	2,304	3,150	4,280	5,082
(x) % Sold Programmatically (DV360 / TTD)	25.0%	25.0%	40.0%	50.0%	55.0%	60.0%
(=) Netflix Programmatic Ads Revenue	133	329	922	1,575	2,354	3,049
(x) MGNI Take-Rate	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%
(=) MGNI Netflix Revenue	-	9.9	27.6	47.3	70.6	91.5
Accretion to MGNI Revenue Growth	0.00%	1.47%	1.29%	5.54%	5.43%	4.25%
% of MGNI Revenue	0.00%	1.45%	3.56%	5.48%	7.31%	8.45%

Magnite, Inc. (MGNI)	FY2024E	FY2025E	FY2026E	FY2027E	FY2028E	FY2029E
\$ in thousands, except per share data	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029
Revenue Estimates						
Revenue	681,886	776,973	862,804	965,601	1,082,568	1,215,768
YoY Growth (%)	10.03%	13.9%	11.0%	11.91%	12.11%	12.30%
Consensus Estimates (FactSet)	611,000	673,400	747,600			
YoY Growth (%)	-1.41%	10.21%	11.02%			
Deviation (%)	11.60%	15.38%	15.41%			
Total TAC	63,019	63,846	72,748	83,958	96,936	111,965
as % of revenue	9.24%	8.22%	8.43%	8.69%	8.95%	9.21%
Revenue ex-TAC	618,867	713,127	790,056	881,644	985,632	1,103,804
YoY Growth (%)	12.70%	15.23%	10.79%	11.59%	11.79%	11.99%

Google Antitrust Trial

SSP breakoff to deliver 2.5% TAM expansion and \$46M to EBITDA

2024: Google Ad Spend vs. Competitors



Google Anti-Trust Trial	
Millions	
Alphabet 2025 Supply Side Spend	14,711
(x) % of Spend Lost	10%
(x) MGNI Share of Spend	25%
(=) MGNI Spend Capture from Alphabet	368
(x) DV+ Take Rate (Est.)	25%
(=) MGNI Revenue Capture from Alphabet	92
(x) MGNI Incremental Margin	50%
(=) MGNI EBITDA Capture from Alphabet	46.0

Potential outcomes benefitting MGNI

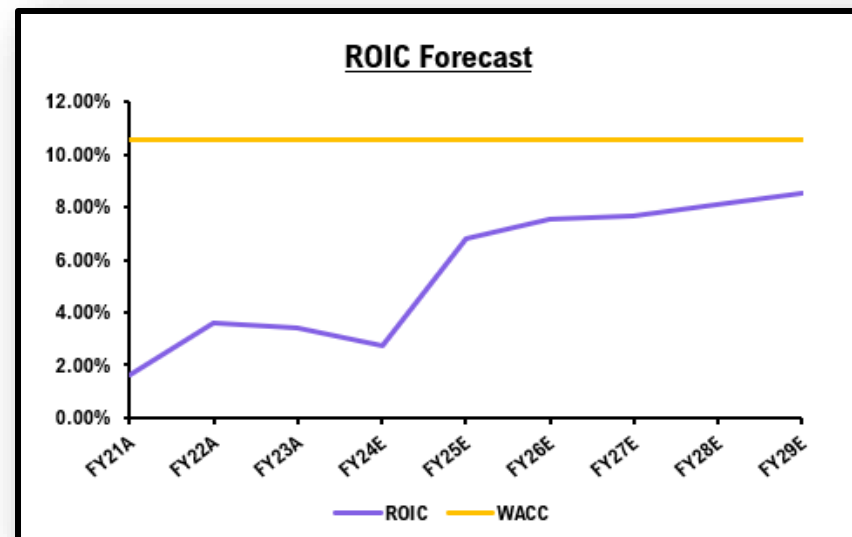
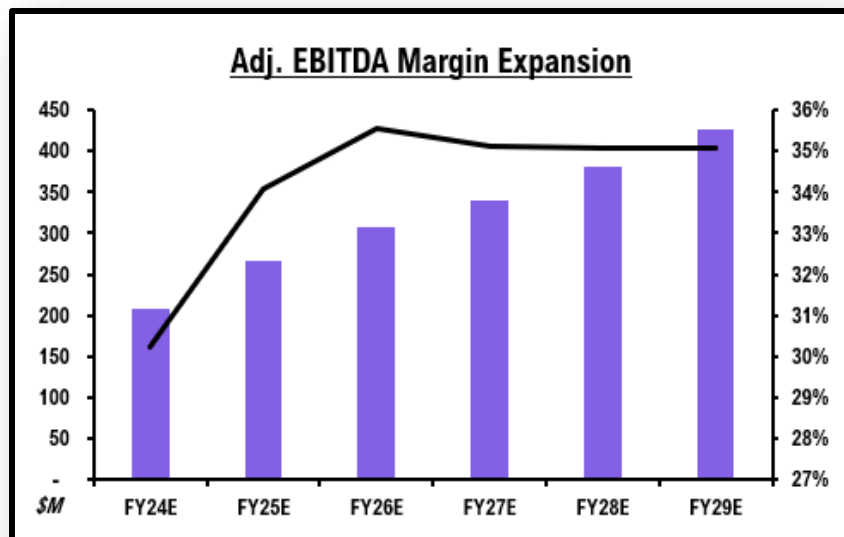
Divest SSP business

Adx, GAM, DV360 broken up

...Google currently retains >50% share of SSP ad spend...

Improving Financial Position

Premium ad partnerships, margin expansion, ROIC to play up multiple



...ROIC rises supporting multiple...

Open Internet Ad Tech Peers								
Ticker	Name	Mkt Cap	FY24 EBITDA			FY25 EBITDA		
DV	DoubleVerify Holdings, Inc.	3,490	\$221	14.6x	33.37%	\$248	13.0x	33.13%
IAS	Integral Ad Science Holding Corp	1,829	\$186	10.0x	35.37%	\$208	8.9x	35.25%
TTD	Trade Desk, Inc. Class A	65,182	\$980	65.0x	41.55%	\$1,357	47.0x	41.90%
MGNI	Magnite, Inc.	2,547	\$202	13.7x	32.95%	\$264	12.2x	34.07%

Valuation

MGNI still undervalued – trade up to ad tech competitors

Bear Case

7x NTM EV/EBITDA

258m FY25 EBITDA

Target: \$13

-25% Return

Base Case

13x NTM EV/EBITDA

264m FY25 EBITDA

Target: \$22

28% Return

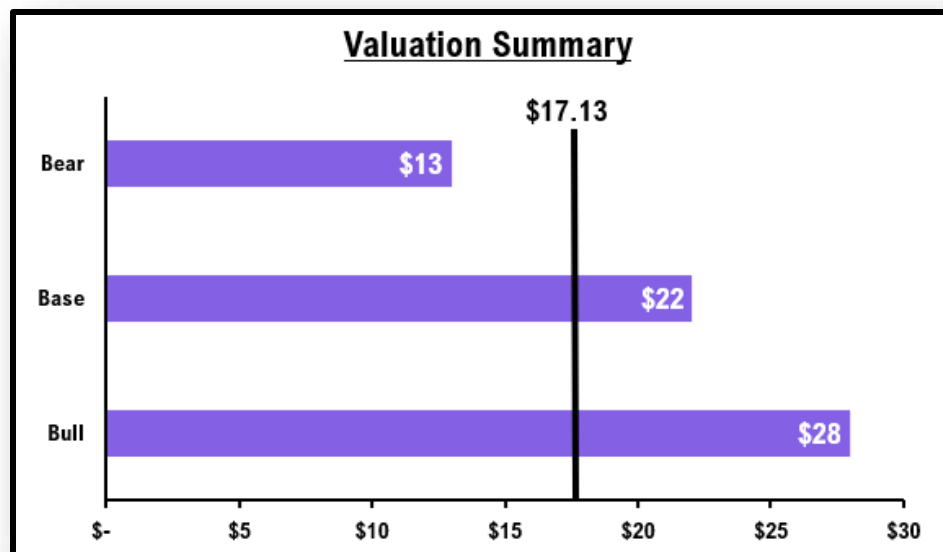
Bull Case

16x NTM EV/EBITDA

270m FY25 EBITDA

Target: \$28

62% Return



Source: ASAP Estimates & Company Data

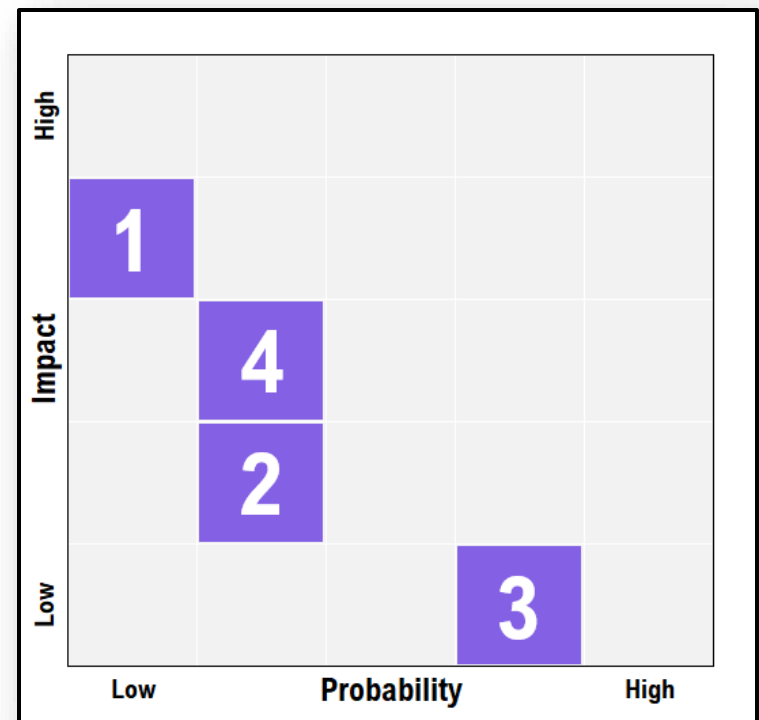
Investment Risks

(1) Unfavorable Shift towards Walled Gardens vs. Open Internet

(2) Unfavorable Google Antitrust trial outcome

(3) Increased competition amongst SSPs

(4) Deacceleration in CTV market



Investment Summary

MGNI Positioned to Excel in the Evolving Ad-Tech Industry



CTV resurgence and premium deal positioning



Google anti-trust trial to benefit MGNI



Position to trade up to competitors

BUY

PT: \$22

28%

Upside

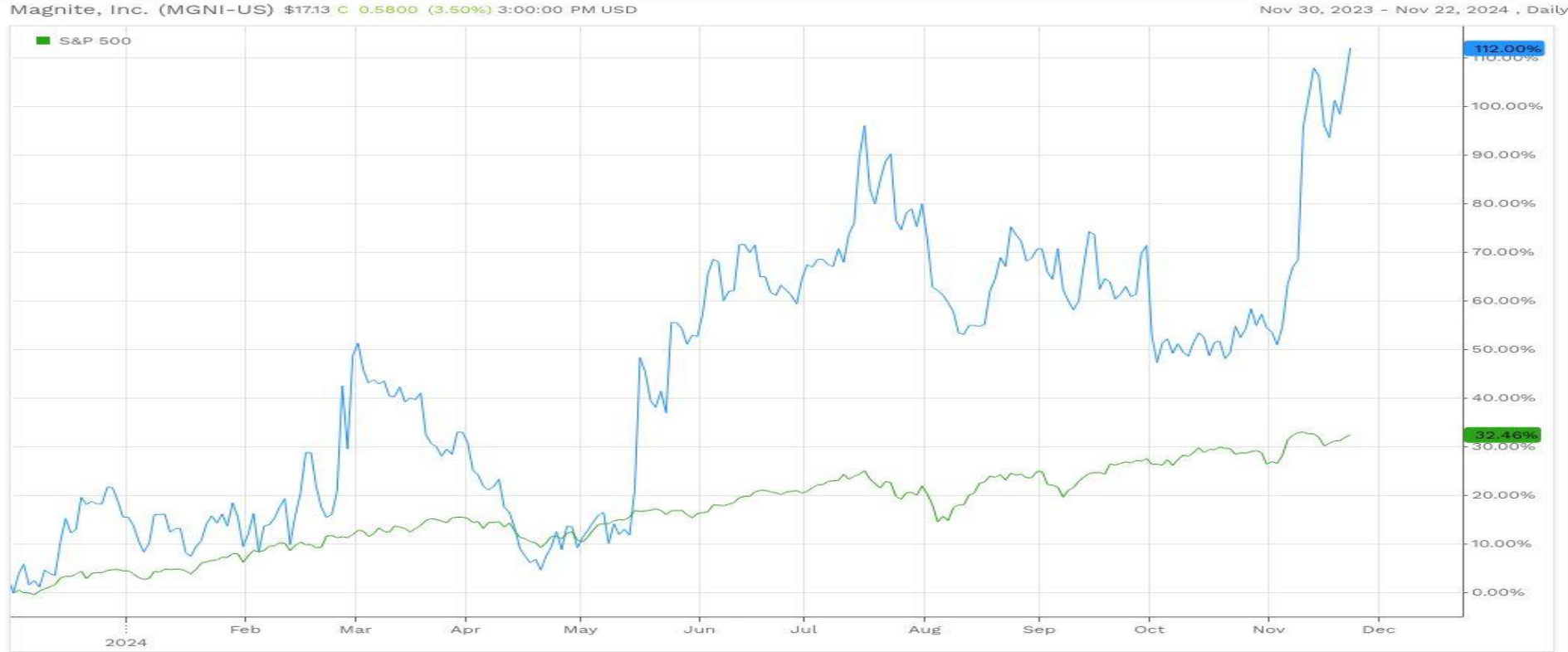
2.38 R/R



Magnite

Appendix

1 Year Stock Price Chart



Appendix

Income Statement

Magnite, Inc. (MGNI)	FY2021A	FY2022A	FY2023A	Q1 2024A	Q2 2024A	Q3 2024A	Q4 2024E	FY2024E	Q1 2025E	Q2 2025E	Q3 2025E	Q4 2025E	FY2025E
<i>\$ in thousands, except per share data</i>	12/31/2021	12/22/2022	12/31/2023	3/31/2024	6/30/2024	9/30/2024	12/31/2024	12/31/2024	3/31/2025	6/30/2025	9/30/2025	12/31/2025	12/31/2025
<i>Color Format: Historicals Formulas Assumptions FactSet Data</i>													
INCOME STATEMENT													
Revenue	468,413	577,069	619,710	149,319	162,880	162,003	207,684	681,886	171,348	182,395	186,181	237,049	776,973
Expenses													
Cost of Revenue	201,662	307,165	409,906	65,902	62,606	62,544	72,689	263,741	59,972	63,838	64,232	81,782	269,824
Sales and Marketing	170,406	200,081	173,982	43,689	42,240	39,585	51,921	177,435	42,837	44,687	45,614	56,892	190,030
Technology and Development	74,449	93,757	94,318	26,891	25,829	20,261	24,922	97,903	20,562	21,887	22,342	28,446	93,237
General and Administrative	64,789	81,382	89,048	26,665	22,631	24,490	31,153	104,939	27,416	25,535	26,065	33,187	112,203
Merger, acquisition, and restructuring costs	38,177	7,468	7,465	-	-	-	-	-	-	-	-	-	-
Total Expenses	549,483	689,853	774,719	163,147	153,306	146,880	180,685	644,018	150,786	155,948	158,254	200,306	665,294
Income (loss) from operations	(81,070)	(112,784)	(155,009)	(13,828)	9,574	15,123	26,999	37,868	20,562	26,447	27,927	36,743	111,679
Other (income) expense:													
Interest Expense, net	19,848	29,260	32,369	7,958	6,793	6,848	6,848	28,447	6,848	6,848	6,848	6,848	27,392
Foreign exchange (gain) loss, net	(1,480)	(1,129)	1,953	(2,315)	516	3,019	-	1,220	-	-	-	-	-
Gain on extinguishment of debt	-	-	(26,480)	7,387	-	319	319	8,025	319	319	319	319	1,276
Other income	(4,450)	(5,318)	(5,304)	(1,292)	(1,284)	(1,306)	(1,306)	(5,188)	(1,306)	(1,306)	(1,306)	(1,306)	(5,224)
Total other expense, net	13,918	22,813	2,538	11,738	6,025	8,880	5,861	32,504	5,861	5,861	5,861	5,861	23,444
Income (loss) before income taxes	(94,988)	(135,597)	(157,547)	(25,566)	3,549	6,243	21,138	5,364	14,701	20,586	22,066	30,882	88,235
Provision (benefit) for income taxes	(95,053)	(5,274)	1,637	(7,809)	4,627	1,029	1,480	(673)	(1,470)	1,441	1,545	2,162	3,677
Net Income (loss)	65	(130,323)	(159,184)	(17,757)	(1,078)	5,214	19,658	6,037	16,171	19,145	20,522	28,720	84,557
EPS													
Basic	0.00	(0.98)	(1.17)	(0.13)	(0.01)	0.04	0.14	0.04	0.11	0.13	0.14	0.20	0.58
Diluted	0.00	(0.98)	(1.17)	(0.13)	(0.01)	0.04	0.13	0.03	0.11	0.13	0.13	0.19	0.55
Weighted Average Shares Outstanding													
Basic	126,294	132,887	136,620	139,297	140,551	141,270	142,402	142,402	143,542	144,692	145,851	147,019	147,019
Diluted	126,294	132,887	136,620	139,297	140,551	148,697	149,974	149,974	151,263	152,562	153,872	155,194	155,194

Appendix



Income Statement (Forecast Period)

Magnite, Inc. (MGNI)

\$ in thousands, except per share data

Color Format: *Historicals* *Formulas* *Assumptions* *FactSet Data*

	<u>Q4 2024E</u>	<u>FY2024E</u>	<u>Q1 2025E</u>	<u>Q2 2025E</u>	<u>Q3 2025E</u>	<u>Q4 2025E</u>	<u>FY2025E</u>	<u>Q1 2026E</u>	<u>Q2 2026E</u>	<u>Q3 2026E</u>	<u>Q4 2026E</u>	<u>FY2026E</u>	<u>FY2027E</u>	<u>FY2028E</u>	<u>FY2029E</u>
	12/31/2024	12/31/2024	3/31/2025	6/30/2025	9/30/2025	12/31/2025	12/31/2025	3/31/2026	6/30/2026	9/30/2026	12/31/2026	12/31/2026	12/31/2027	12/31/2028	12/31/2029
INCOME STATEMENT															
Revenue	207,684	681,886	171,348	182,395	186,181	237,049	776,973	195,114	195,349	206,325	266,017	862,804	965,601	1,082,568	1,215,768
Expenses															
Cost of Revenue	72,689	263,741	59,972	63,838	64,232	81,782	269,824	66,339	66,419	69,119	89,116	290,992	318,648	341,009	364,731
Sales and Marketing	51,921	177,435	42,837	44,687	45,614	56,892	190,030	46,827	46,884	48,486	62,514	204,711	222,088	248,991	279,627
Technology and Development	24,922	97,903	20,562	21,887	22,342	28,446	93,237	23,414	23,442	24,759	31,922	103,537	115,872	129,908	145,892
General and Administrative	31,153	104,939	27,416	25,535	26,065	33,187	112,203	31,218	27,349	28,886	37,242	124,695	135,184	151,560	170,208
Merger, acquisition, and restructuring costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	180,685	644,018	150,786	155,948	158,254	200,306	665,294	167,798	164,093	171,250	220,794	723,934	791,793	871,467	960,457
Income (loss) from operations	26,999	37,868	20,562	26,447	27,927	36,743	111,679	27,316	31,256	35,075	45,223	138,870	173,808	211,101	255,311
Other (income) expense:															
Interest Expense, net	6,848	28,447	6,848	6,848	6,848	6,848	27,392	6,848	6,848	6,848	6,848	27,392	27,392	27,392	27,392
Foreign exchange (gain) loss, net	-	1,220	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain on extinguishment of debt	319	8,025	319	319	319	319	1,276	319	319	319	319	1,276	1,276	1,276	1,276
Other income	(1,306)	(5,188)	(1,306)	(1,306)	(1,306)	(1,306)	(5,224)	(1,306)	(1,306)	(1,306)	(1,306)	(5,224)	(5,224)	(5,224)	(5,224)
Total other expense, net	5,861	32,504	5,861	5,861	5,861	5,861	23,444	5,861	5,861	5,861	5,861	23,444	23,444	23,444	23,444
Income (loss) before income taxes	21,138	5,364	14,701	20,586	22,066	30,882	88,235	21,455	25,395	29,214	39,362	115,426	150,364	187,657	231,867
Provision (benefit) for income taxes	1,480	(673)	(1,470)	1,441	1,545	2,162	3,677	(2,145)	5,079	5,843	7,872	16,649	30,073	37,531	46,373
Net Income (loss)	19,658	6,037	16,171	19,145	20,522	28,720	84,557	23,600	20,316	23,371	31,489	98,777	120,291	150,125	185,494
EPS															
Basic	0.14	0.04	0.11	0.13	0.14	0.20	0.58	0.16	0.14	0.16	0.21	0.66	0.79	0.99	1.22
Diluted	0.13	0.03	0.11	0.13	0.13	0.19	0.55	0.15	0.13	0.15	0.20	0.62	0.75	0.93	1.16
Weighted Average Shares Outstanding															
Basic	142,402	142,402	143,542	144,692	145,851	147,019	147,019	148,197	149,384	150,580	151,786	151,786	151,786	151,786	151,786
Diluted	149,974	149,974	151,263	152,562	153,872	155,194	155,194	156,527	157,872	159,228	160,595	160,595	160,595	160,595	160,595

Appendix

Balance Sheet

Magnite, Inc. (MGNI)

\$ in thousands, except per share data

Color Format: *Historicals* Formulas *Assumptions* FactSet Data

	FY2021A	FY2022A	FY2023A	FY2024E	FY2025E	FY2026E	FY2027E	FY2028E	FY2029E
	12/31/2021	12/22/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029
BALANCE SHEET									
Assets									
Current Assets:									
Cash and cash equivalents	230,401	326,254	326,219	362,233	572,872	605,218	863,544	1,156,327	1,489,674
Accounts receivable, net	927,781	976,506	1,176,276	1,118,293	1,274,236	1,414,999	1,583,586	1,775,411	1,993,860
Prepaid expenses and other current assets	19,934	23,501	20,508	22,318	22,318	22,318	22,318	22,318	22,318
TOTAL CURRENT ASSETS	1,178,116	1,326,261	1,523,003	1,502,843	1,869,426	2,042,535	2,469,448	2,954,057	3,505,852
Property and Equipment, net									
Property and Equipment, net	34,067	44,969	47,371	85,830	92,179	86,079	87,991	91,318	95,678
Right of use lease asset	76,986	78,211	60,549	57,565	57,565	57,565	57,565	57,565	57,565
Internal use software development costs, net	20,093	23,671	21,926	26,676	26,676	26,676	26,676	26,676	26,676
Intangible assets, net	426,615	253,501	51,011	20,877	6,432	431	-	-	-
Goodwill	969,873	978,217	978,217	978,217	978,217	978,217	978,217	978,217	978,217
Other assets, non-current	6,862	7,383	6,729	9,145	9,145	9,145	9,145	9,145	9,145
TOTAL ASSETS	2,712,612	2,712,213	2,688,806	2,681,153	3,039,640	3,200,648	3,629,042	4,116,977	4,673,133
Liabilities and Stockholders' Equity									
Current Liabilities:									
Accounts Payable and accrued expenses	1,000,956	1,094,321	1,372,176	1,275,126	1,452,940	1,613,444	1,805,674	2,024,402	2,273,487
Lease liabilities, current	19,142	21,172	20,402	18,232	18,232	18,232	18,232	18,232	18,232
Debt, current	3,600	3,600	3,600	3,641	3,641	3,641	3,641	3,641	3,641
Other Current liabilities	5,697	5,939	5,957	7,013	7,013	7,013	7,013	7,013	7,013
TOTAL CURRENT LIABILITIES	1,029,395	1,125,032	1,402,135	1,304,012	1,481,826	1,642,330	1,834,560	2,053,288	2,302,373
Debt, non-current, net of debt issuance costs									
Debt, non-current, net of debt issuance costs	720,023	722,757	532,986	550,168	550,168	345,101	345,101	345,101	345,101
Lease liabilities, non-current	66,487	66,331	49,665	46,577	46,577	46,577	46,577	46,577	46,577
Deferred tax liabilities, net	13,303	5,072	680	-	-	-	-	-	-
Other liabilities, non-current	2,647	1,723	1,657	1,632	1,632	1,632	1,632	1,632	1,632
TOTAL LIABILITIES	1,831,855	1,920,915	1,987,123	1,902,389	2,080,203	2,035,640	2,227,870	2,446,598	2,695,683
Stockholders' Equity:									
Common Stock	2	2	2	2	2	2	2	2	2
Additional Paid-in Capital	1,282,589	1,319,221	1,387,715	1,457,768	1,553,884	1,660,678	1,776,550	1,895,633	2,017,209
Accumulated other comprehensive loss	(1,376)	(3,151)	(2,076)	(1,086)	(1,086)	(1,086)	(1,086)	(1,086)	(1,086)
Treasury Stock	(394,451)	-	-	-	-	-	-	-	-
Accumulated deficit	(6,007)	(524,774)	(683,958)	(677,921)	(593,363)	(494,586)	(374,295)	(224,169)	(38,675)
TOTAL STOCKHOLDERS' EQUITY	880,757	791,298	701,683	778,764	959,437	1,165,008	1,401,171	1,670,379	1,977,450
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	2,712,612	2,712,213	2,688,806	2,681,153	3,039,640	3,200,648	3,629,042	4,116,977	4,673,133

Appendix

Cash Flow Statement

Magnite, Inc. (MGNI)	FY2021A	FY2022A	FY2023A	FY2024E	FY2025E	FY2026E	FY2027E	FY2028E	FY2029E
<i>\$ in thousands, except per share data</i>	<i>12/31/2021</i>	<i>12/31/2022</i>	<i>12/31/2023</i>	<i>12/31/2024</i>	<i>12/31/2025</i>	<i>12/31/2026</i>	<i>12/31/2027</i>	<i>12/31/2028</i>	<i>12/31/2029</i>
<i>Color Format: Historicals Formulas Assumptions</i>	<i>FactSet Data</i>								
CASHFLOW STATEMENT									
Net Income				6,037	84,557	98,777	120,291	150,125	185,494
Depreciation and Amortization				48,535	53,096	57,101	45,518	45,674	45,640
Stock Based Compensation				92,390	96,116	106,794	115,872	119,082	121,577
(Gain) loss on extinguishment of debt				7,397	-	-	-	-	-
Gain on disposal of property and equipment				309	-	-	-	-	-
Provision for doubtful accounts				728	-	-	-	-	-
Amortization of debt discount and issuance costs				3,136	-	-	-	-	-
Non-cash lease expense				(2,291)	-	-	-	-	-
Deferred income taxes				(2,176)	-	-	-	-	-
Unrealized foreign currency gain, net				(846)	-	-	-	-	-
Other items, net				(17)	-	-	-	-	-
CFO before W/C				153,203	233,770	262,672	281,682	314,881	352,711
Accounts receivable, net				55,624	(155,944)	(140,763)	(168,587)	(191,825)	(218,449)
Prepaid expenses and other current assets				(855)	-	-	-	-	-
Accounts Payable and accrued expenses				(93,180)	177,814	160,504	192,230	218,728	249,085
Lease liabilities, current				-	-	-	-	-	-
Debt, current				-	-	-	-	-	-
Other Current liabilities				700	-	-	-	-	-
CFO from W/C				(37,710)	21,870	19,741	23,643	26,902	30,636
Cash from Operating Activities				115,493	255,640	282,413	305,325	341,784	383,347
Purchases of PP&E				(49,082)	(45,000)	(45,000)	(47,000)	(49,000)	(50,000)
Capitalized internal use software development costs				(11,587)	-	-	-	-	-
Cash from Investing Activities				(60,669)	(45,000)	(45,000)	(47,000)	(49,000)	(50,000)
Proceeds from issuance of 2024 Term Loan B Facility, net of debt discount				415,446	-	-	-	-	-
Repayment of 2021 Term Loan B Facility				(403,113)	-	-	-	-	-
Payment for debt issuance costs				(4,547)	-	-	-	-	-
Repayment of debt				(913)	-	-	-	-	-
Repurchase of Convertible Senior Notes				-	-	(205,067)	-	-	-
Proceeds from exercise of stock options				368	-	-	-	-	-
Repayment of financing lease				-	-	-	-	-	-
Taxes paid related to net share settlement				(17,682)	-	-	-	-	-
Purchase of treasury stock				(9,006)	-	-	-	-	-
Payment of indemnification claims holdback				-	-	-	-	-	-
Cash from Financing Activities				(19,447)	-	(205,067)	-	-	-
FX				1,346	-	-	-	-	-
Net Change in Cash				36,723	210,640	32,346	258,325	292,784	333,347

Appendix

Schedules

PP&E Schedule									
Beginning of Period		34,067	44,969	47,371	85,830	92,179	86,079	87,991	91,318
Add: CAPEX of PP&E		30,815	61,041	49,082	45,000	45,000	47,000	49,000	50,000
Less: Depreciation of Fixed Assets		19,913	58,639	10,623	38,651	51,100	45,087	45,674	45,640
End of Period	34,067	44,969	47,371	85,830	92,179	86,079	87,991	91,318	95,678
as % of total D&A				21.89%	72.79%	89.49%	99.05%	100.00%	100.00%
Intangible Assets Schedule									
Beginning of Period		426,615	253,501	51,011	20,877	6,432	431	-	-
Less: Amortization of Intangibles		173,114	202,490	30,134	14,445	6,001	431	-	-
End of Period	426,615	253,501	51,011	20,877	6,432	431	-	-	-
as % of total D&A				62.09%	27.21%	10.51%	0.95%	0.00%	0.00%
Depreciation and Amortization Schedule									
Cost of revenue D&A	78,115	142,616	211,956	39,120	43,333	46,613	38,238	37,511	36,473
as % of cost of revenue	38.74%	46.43%	51.71%	14.83%	16.06%	16.02%	12.00%	11.00%	10.00%
Sales and marketing D&A	67,463	71,887	27,584	8,722	9,126	9,782	6,663	7,470	8,389
as % of sales and marketing	39.59%	35.93%	15.85%	4.92%	4.80%	4.78%	3.00%	3.00%	3.00%
Technology and development D&A	674	913	779	409	367	406	348	390	438
as % of technology and development	0.91%	0.97%	0.83%	0.42%	0.39%	0.39%	0.30%	0.30%	0.30%
General and administrative D&A	634	636	501	283	270	300	270	303	340
as % of general and administrative	0.98%	0.78%	0.56%	0.27%	0.24%	0.24%	0.20%	0.20%	0.20%
Total Depreciation and Amortization	146,886	216,052	240,820	48,535	53,096	57,101	45,518	45,674	45,640
Stock Based Compensation									
Total Stock Based Compensation	40,735	64,118	72,617	92,420	96,116	106,794	115,872	119,082	121,577
% of Revenue	8.70%	11.11%	11.72%	13.55%	12.37%	12.38%	12.00%	11.00%	10.00%

Appendix

Revenue Estimates

Magnite, Inc. (MGNI)

\$ in thousands, except per share data

	<u>FY2021A</u>	<u>FY2022A</u>	<u>FY2023A</u>	<u>Q1 2024A</u>	<u>Q2 2024A</u>	<u>Q3 2024A</u>	<u>Q4 2024E</u>	<u>FY2024E</u>	<u>FY2025E</u>	<u>FY2026E</u>	<u>FY2027E</u>	<u>FY2028E</u>	<u>FY2029E</u>
	12/31/2021	12/22/2022	12/31/2023	3/31/2024	6/30/2024	9/30/2024	12/31/2024	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029
Revenue Estimates													
Revenue	468,413	577,069	619,710	149,319	162,880	162,003	207,684	681,886	776,973	862,804	965,601	1,082,568	1,215,768
YoY Growth (%)		23.20%	7.39%	14.73%	6.78%	7.94%	11.10%	10.03%	13.9%	11.0%	11.91%	12.11%	12.30%
Consensus Estimates (FactSet)							187,000	611,000	673,400	747,600			
YoY Growth (%)							0.04%	-1.41%	10.21%	11.02%			
Deviation (%)							11.06%	11.60%	15.38%	15.41%			
Total TAC	51,958	62,454	70,563	18,766	16,117	12,575	15,561	63,019	63,846	72,748	83,958	96,936	111,965
as % of revenue	11.09%	10.82%	11.39%	12.57%	9.90%	7.76%	7.49%	9.24%	8.22%	8.43%	8.69%	8.95%	9.21%
Revenue ex-TAC	416,455	514,615	549,147	130,553	146,763	149,428	192,123	618,867	713,127	790,056	881,644	985,632	1,103,804
YoY Growth (%)		23.57%	6.71%	12.50%	8.97%	12.24%	16.24%	12.70%	15.23%	10.79%	11.59%	11.79%	11.99%

Appendix

Segment Estimates

Company Segments													
CTV Revenue	185,254	268,572	282,126	72,592	77,769	76,217	95,215	321,793	370,204	423,756	491,557	570,207	661,440
CTV traffic acquisition costs	41,847	53,769	63,632	17,698	14,816	11,828	14,282	58,624	59,233	67,801	78,649	91,233	105,830
CTV Revenue ex-TAC	143,407	214,803	218,494	54,894	62,953	64,389	80,933	263,169	310,971	355,955	412,908	478,974	555,609
CTV TAC as % of CTV rev	22.59%	20.02%	22.55%	24.38%	19.05%	15.52%	15.00%	18.22%	16.00%	16.00%	16.00%	16.00%	16.00%
Desktop Revenue	118,182	115,694	105,089	22,774	26,507	25,951	30,765	105,997	109,176	111,360	113,587	115,859	118,176
Desktop traffic acquisition costs	5,201	3,998	1,262	414	410	258	461	1,543	1,638	1,670	1,704	1,738	1,773
Desktop Revenue ex-TAC	112,981	111,696	103,827	22,360	26,097	25,693	30,303	104,453	107,539	109,690	111,883	114,121	116,404
Desktop TAC as % of Desktop rev	4.40%	3.46%	1.20%	1.82%	1.55%	0.99%	1.50%	1.46%	1.50%	1.50%	1.50%	1.50%	1.50%
Mobile Revenue	164,977	192,803	232,495	53,953	58,604	59,835	81,704	254,096	297,593	327,688	360,457	396,502	436,153
Mobile traffic acquisition costs	4,910	4,687	5,669	654	891	489	817	2,851	2,976	3,277	3,605	3,965	4,362
Mobile Revenue ex-TAC	160,067	188,116	226,826	53,299	57,713	59,346	80,887	251,245	294,617	324,411	356,852	392,537	431,791
Mobile TAC as % of Mobile revenue	2.98%	2.43%	2.44%	1.21%	1.52%	0.82%	1.00%	1.12%	1.00%	1.00%	1.00%	1.00%	1.00%
Segment Growth													
CTV Revenue Growth YoY (%)		44.98%	5.05%	22.93%	8.33%	12.47%	14.00%	14.06%	15.04%	14.47%	16.00%	16.00%	16.00%
CTV Revenue Growth ex-TAC YoY (%)				18.28%	12.25%	22.72%							
Desktop Revenue Growth YoY (%)		-2.11%	-9.17%	-0.62%	3.05%	-0.15%	1.00%	0.86%	3.00%	2.00%	2.00%	2.00%	2.00%
Desktop Revenue Growth ex-TAC YoY (%)				-1.67%	3.53%	-0.02%							
Mobile Revenue Growth YoY (%)		16.87%	20.59%	11.97%	6.49%	6.22%	12.00%	9.29%	17.12%	10.11%	10.00%	10.00%	10.00%
Mobile Revenue Growth ex-TAC YoY (%)				13.65%	8.09%	7.96%							
Segment Mix													
CTV Revenue (%)	39.55%	46.54%	45.53%	48.62%	47.75%	47.05%	45.85%	47.19%	47.65%	49.11%	50.91%	52.67%	54.41%
bps change PoP		699bps	-102bps		-87bps	-70bps	-120bps	167bps	46bps	147bps	179bps	176bps	173bps
Desktop Revenue (%)	25.23%	20.05%	16.96%	15.25%	16.27%	16.02%	14.81%	15.54%	14.05%	12.91%	11.76%	10.70%	9.72%
bps change PoP		-518bps	-309bps		102bps	-26bps	-121bps	-141bps	-149bps	-114bps	64bps	-249bps	-251bps
Mobile Revenue (%)	35.22%	33.41%	37.52%	36.13%	35.98%	36.93%	39.34%	37.26%	38.30%	37.98%	37.33%	36.63%	35.87%
bps change PoP		-181bps	411bps		-15bps	95bps	241bps	-25bps	104bps	-32bps	204bps	-155bps	-131bps

Appendix

Geographic Segments

Magnite, Inc. (MGNI)	FY2021A	FY2022A	FY2023A	Q1 2024A	Q2 2024A	Q3 2024A
<i>\$ in thousands, except per share data</i>	<i>12/31/2021</i>	<i>12/22/2022</i>	<i>12/31/2023</i>	<i>3/31/2024</i>	<i>6/30/2024</i>	<i>9/30/2024</i>
Geographic Segments						
Geographic						
United States	365,161	447,634	462,167	113,412	123,363	120,240
International	103,252	129,435	157,543	35,907	39,517	41,763
Geographic Growth						
<i>United States Growth YoY (%)</i>		22.59%	3.25%	16.73%	7.75%	8.05%
<i>International Growth YoY (%)</i>		25.36%	21.72%	8.83%	3.84%	7.63%
Geographic Mix						
<i>United States (%)</i>		77.57%	74.58%	75.95%	75.74%	74.22%
<i>bps change PoP</i>			-299bps		-21bps	-152bps
<i>International (%)</i>		22.43%	25.42%	24.05%	24.26%	25.78%
<i>bps change PoP</i>			299bps		21bps	152bps

Appendix

DCF Inputs

Unlevered FCF Calculation (FCFF) <i>In \$millions</i>	ACTUALS			STAGE 1					STAGE 2				
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Revenues	468,413	577,069	619,710	681,886	776,973	862,804	965,601	1,082,568	1,215,768	1,337,345	1,471,080	1,618,188	1,780,006
% Growth		23.2%	7.4%	10.0%	13.9%	11.0%	11.9%	12.1%	10.0%	10.0%	10.0%	10.0%	10.0%
EBIT	-81,070	-112,784	-155,009	37,868	111,679	138,870	173,808	211,101	255,311	260,782	286,861	315,547	347,101
EBIT Margin	-17.3%	-19.5%	-25.0%	5.6%	14.4%	16.1%	18.0%	19.5%	19.5%	19.5%	19.5%	19.5%	19.5%
Pretax Income	-94,988	-135,597	-157,547	5,364	88,235	115,426	150,364	187,657	231,867	231,821	255,003	280,503	308,554
Pretax Margin	-20.3%	-23.5%	-25.4%	0.8%	11.4%	13.4%	15.6%	17.3%	17.3%	17.3%	17.3%	17.3%	17.3%
Income Taxes	-95,053	-5,274	1,637	-673	3,677	16,649	30,073	37,531	46,373	46,364	51,001	56,101	61,711
Tax Rate (% of Pretax)					4.2%	14.4%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
NOPAT = EBIT*(1-tax rate)	-81,070	-112,784	-155,009	37,868	107,024	118,840	139,047	168,881	204,249	208,626	229,488	252,437	277,681
% Growth		39.1%	37.4%	-124.4%	182.6%	11.0%	17.0%	21.5%	20.9%	2.1%	10.0%	10.0%	10.0%
Depreciation & Amortization	146,886	216,052	240,820	48,535	53,096	57,101	45,518	45,674	45,640	56,423	62,065	68,271	75,098
D&A % of Sales	31.4%	37.4%	38.9%	7.1%	6.8%	6.6%	4.7%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
Stock-Based Compensation	40,735	64,118	72,617	92,420	96,116	106,794	115,872	119,082	121,577	147,108	161,819	178,001	195,801
SBC % of Sales	8.7%	11.1%	11.7%	13.6%	12.4%	12.4%	12.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
Capital Expenditures	0	30,815	61,041	49,082	45,000	45,000	47,000	49,000	50,000	51,000	52,020	53,060	54,122
YoY % Growth			98.1%	-19.6%	-8.3%	0.0%	4.4%	4.3%	2.0%	2.0%	2.0%	2.0%	2.0%
Net change in operating working cap				-37,710	21,870	19,741	23,643	26,902	30,636	30,636	30,636	30,636	30,636
Unlevered FCF (FCFF)				92,031	233,107	257,475	277,080	311,539	352,102	391,793	431,988	476,285	525,095
YoY % Growth					153.3%	10.5%	7.6%	12.4%	13.0%	11.3%	10.3%	10.3%	10.2%

Appendix

DCF Outputs

DCF Valuation In \$millions	STAGE 1					STAGE 2				
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
LT Growth Rate (Terminal)	2.0%									
Discount Rate (WACC)	13.9%									
Unlevered FCF	92,031	233,107	257,475	277,080	311,539	352,102	391,793	431,988	476,285	525,095
Years from the date of calculation (timing adjustment factor)	0.1	1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1
Discount Factor (denominator)	1.01	1.15	1.31	1.50	1.70	1.94	2.21	2.51	2.86	3.26
Present Value of FCF	90,844	202,083	196,030	185,270	182,947	181,591	177,457	171,839	166,391	161,107

DCF Valuation	\$ Value	Contr
PV of FCF (1-5 yrs) - Stage 1	857,173	28%
PV of FCF (6-10 yrs) - Stage 2	858,384	28%
Terminal Value - Stage 3	1,385,077	45%
Implied Enterprise Value (EV) from DCF	3,100,634	100%
Implied EV/NTM EBITDA multiple		
Total Debt	572,041	
Cash and cash equivalents	387,244	
Net Debt (total debt - cash)	184,797	
Implied Equity Value	2,915,837	
Diluted shares outstanding	148,697.0	
Implied Equity Value per Share	\$19.61	
Actual Stock price (today)	\$17.13	
% upside (downside) implied by DCF model =	14%	

WACC CALCULATION			
Equity Mkt Cap =	2,547,180	81.7%	
Total Debt =	572,041	18.3%	
Total Capitalization =	3,119,221	100.0%	
Cost of Equity =	$R_f + \text{Beta} \times \text{ERP} = (E_{\text{S\&P500}} - R_f)$		
	4.44%	1.98x	5.56%
			15.4%
Cost of Debt =	weighted average cost of debt =		7.1%
WACC =	$(W_E \times R_E) + (W_D \times R_D) \times (1 - \text{tax rate})$		
	12.62%	1.25%	13.9%

Appendix

ROIC Estimates

Magnite, Inc. (MGNI)

\$ in thousands, except per share data

Color Format: [Historicals](#) [Formulas](#) [Assumptions](#) [FactSet Data](#)

	<u>FY21A</u>	<u>FY22A</u>	<u>FY23A</u>	<u>FY24E</u>	<u>FY25E</u>	<u>FY26E</u>	<u>FY27E</u>	<u>FY28E</u>	<u>FY29E</u>
	12/31/2021	12/22/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029
ROIC Estimates									
NOPAT									
From DCF Calculation	(81,070)	(112,784)	(155,009)	37,868	107,024	118,840	139,047	168,881	204,249
Short term debt (incl. short term leases)	22,742	24,772	24,002	21,873	21,873	21,873	21,873	21,873	21,873
Long term debt (incl. non-current leases)	786,510	789,088	582,651	596,745	596,745	391,678	391,678	391,678	391,678
Common Stock + APIC	1,282,589	1,319,221	1,387,715	1,457,768	1,553,884	1,660,678	1,776,550	1,895,633	2,017,209
Accumulated Deficit	(6,007)	(524,774)	(683,958)	(677,921)	(593,363)	(494,586)	(374,295)	(224,169)	(38,675)
Adjustments:									
Allowance for Doubtful Accounts									
Total Invested Capital	2,085,834	1,608,307	1,310,410	1,398,466	1,579,139	1,579,643	1,815,806	2,085,014	2,392,085
ROIC	1.60%	3.57%	3.39%	2.71%	6.78%	7.52%	7.66%	8.10%	8.54%

Appendix

Adj. EBITDA Estimates

Magnite, Inc. (MGNI)

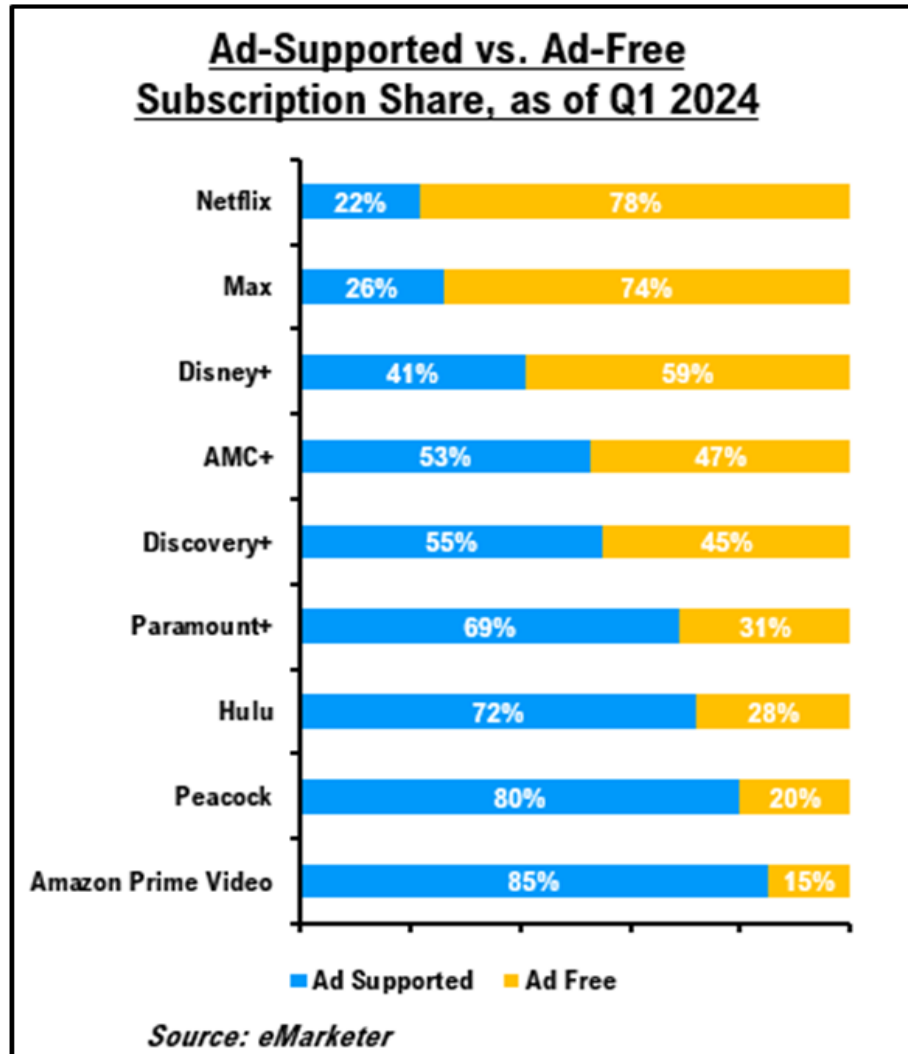
\$ in thousands, except per share data

Color Format: [Historicals](#) [Formulas](#) [Assumptions](#) [FactSet Data](#)

	<u>FY2021A</u>	<u>FY2022A</u>	<u>FY2023A</u>	<u>FY2024E</u>	<u>FY2025E</u>	<u>FY2026E</u>	<u>FY2027E</u>	<u>FY2028E</u>	<u>FY2029E</u>
	12/31/2021	12/22/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029
Calculation of Adjusted EBITDA									
Net Income (loss)				6,037	84,557	98,777	120,291	150,125	185,494
Add: Depreciation & Amortization				48,535	38,651	51,100	45,087	45,674	45,640
Add: Amortization of acquired intangibles				30,134	14,445	6,001	431	-	-
Add: Stock based compensation				92,420	96,116	106,794	115,872	119,082	121,577
Add: Non-operational real estate				-	-	-	-	-	-
Add: Interest Expense				28,447	27,392	27,392	27,392	27,392	27,392
Add: Foreign exchange (gain) loss, net				1,220	-	-	-	-	-
Add: Gain on extinguishment of debt				-	-	-	-	-	-
Add: Provision for income taxes				(673)	3,677	16,649	30,073	37,531	46,373
Adjusted EBITDA	148,659	178,790	315,130	206,120	264,839	306,712	339,147	379,805	426,476
EBITDA Margin (%)	31.74%	30.98%	50.85%	30.23%	34.09%	35.55%	35.12%	35.08%	35.08%

Appendix

Ad Based Streaming Mix





ALPHA  **CHALLENGE**
Kenan-Flagler Business School
The University of North Carolina

December 5th, 2024

Team Number: 7

Students: Cheney Chen, Annika Ulrich, Helen Wu

IQVIA (NYSE: IQV) Overview

Leading provider of advanced analytics, technology solutions, and clinical research services to the life sciences industry

Company Description

- Formed in 2016 via merger of Quintiles/IMS Health
- Three segments: Technology and Analytics Solutions (T&AS), Research and Development Solutions (R&DS), and Contract Sales and Medical Solutions (CS&MS)
- Boasts one of the largest and most comprehensive health information collections (~61 petabytes)
- Considered a global leader in protecting patient privacy
- Diversified client base spanning pharma, biotechnology, device/diagnostic, and consumer health companies
- Headquartered in Durham, NC. Apx. 87,000 employees

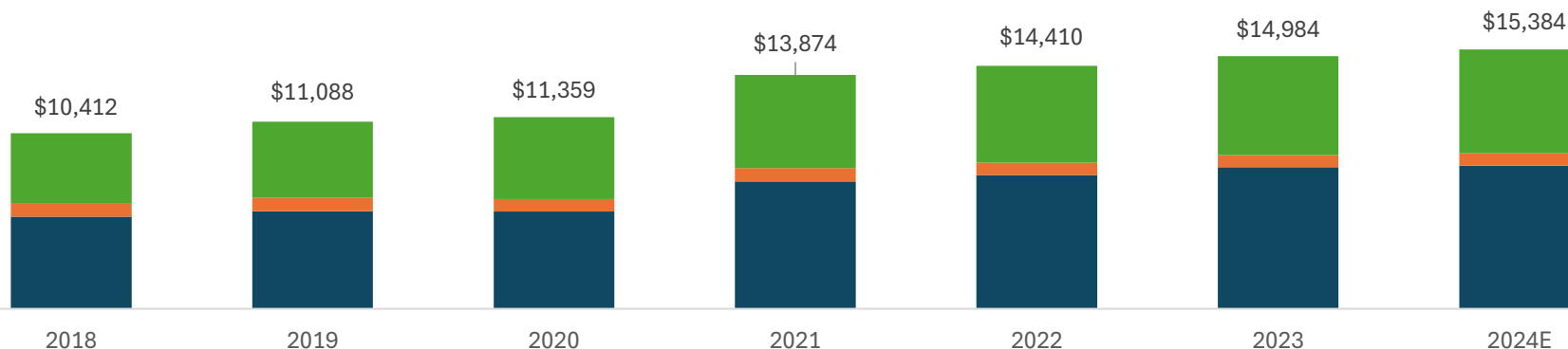
Financials and Trading Statistics

\$mm, unless otherwise stated

Current Price (\$)	\$201.82	52W High/Low (\$)	\$188 - \$262
Market Cap	37,205.0	Avg. Volume (mm)	1.9
Enterprise Value	48,896.0	Float (%)	99%
'25E Revenue	16,149.0	Short Interest (%)	1.5% of float
'25E GM (%)	35%	EV/'25 EBITDA (x)	12.7x
'25E EBITDA	3,872.0	'25 P/E (x)	16.7x
EBITDA Margin (%)	24%	ND / '24 EBITDA E (x)	3.4x
2025E EPS (\$)	\$12.06	Dividend Yield (%)	n/a

Revenue Mix by Segment (FYs Ending 12/31)

■ Research & Development Solutions ■ Contract Sales & Medical Solutions ■ Technology & Analytics Solutions



IQVIA's Value Proposition

IQVIA drives value across the life sciences value chain by bringing together proprietary information assets, advanced analytics, transformative technology, and domain expertise

IQVIA receives apx. 120 bn healthcare records annually. Its infrastructure connects complex healthcare data while applying a wide range of privacy, security, operational, legal and contractual protections



Improves clinical trial design, site identification, and patient recruitment through expansive levels of information; includes product-level tracking in 94 markets and information about treatments and outcomes on more than 1.2 bn unique non-identified patient records globally



Combines sophisticated retrospective database analytics, prospective real world data collection technology platforms, and scientific expertise to address issues related to cost, value, and patient outcomes



Helps clients increase clinical operations performance; supports regulatory and compliance needs; and orchestrates sales operations/ management, multi-channel marketing, performance management



Integrates data and analytics to inform client decision-making from R&D to commercialization



Includes 30k T&AS employees, 48k R&DS employees, and 7k CS&MS employees



Investment Thesis

Recent choppiness in pharma has caused market to underestimate IQVIA's ability to drive long-term revenue growth and margin improvement via continued innovation.

Market Growth

- Renewed growth outlook for life sciences and pharma
- Increasing demand for outsourced services given regulatory complexity, competitive market dynamics

Superior Offering vs. Competitors, Enhanced by Generative AI Capabilities

- Healthcare/life science focus, incumbent advantage, integration of capabilities, and breadth of knowledge
- Continued backlog growth (record in 3Q24)
- Innovative potential unlocked by AI Assistant

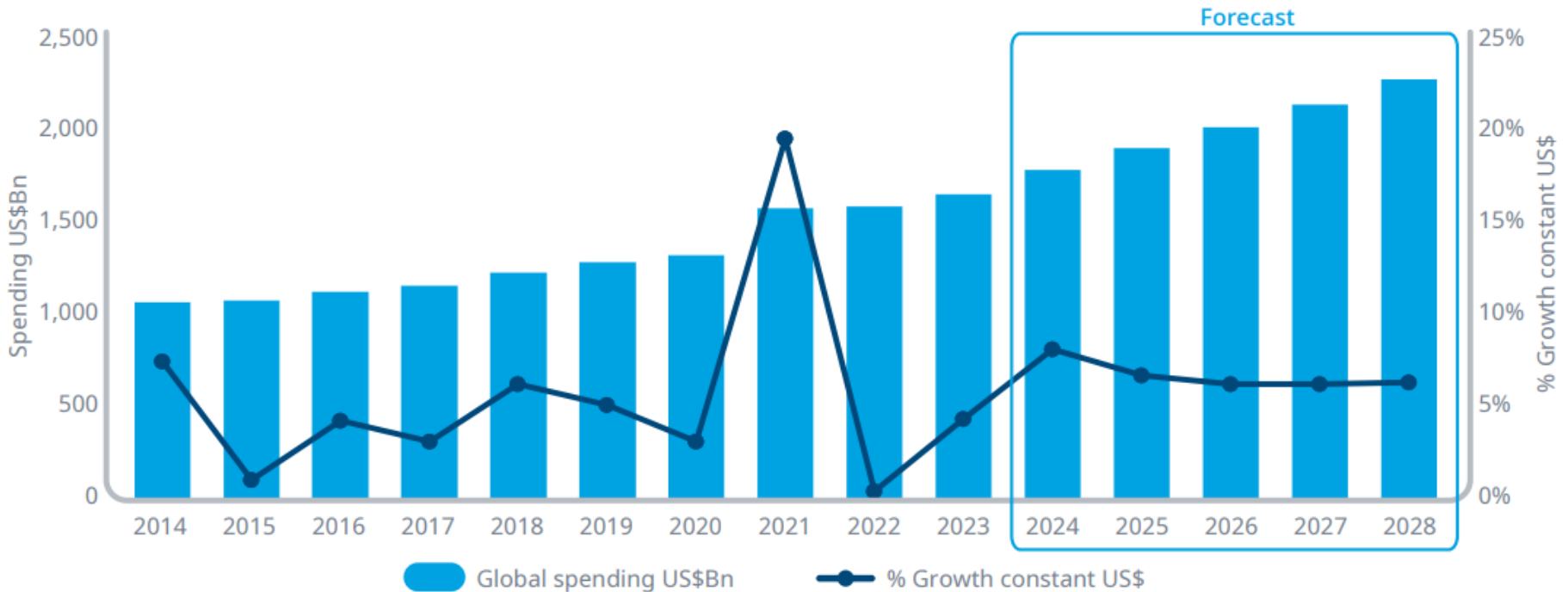
Margin Expansion

- Mission-critical products support pricing power
- Disciplined approach to cost management
- Economies of scale

Thesis #1 – Growth in Global Demand for Medicines

The global medicine market is expected to grow at a 5–8% CAGR through 2028, equating to about \$2.3 trillion in USD

Global medicine market size and growth 2014-2028 including estimated COVID-19 vaccine and therapeutic spending

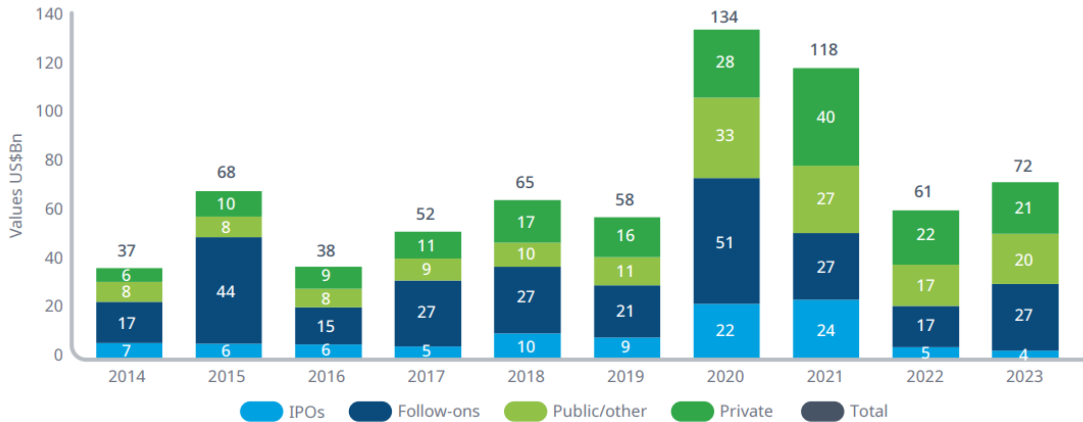


Source: IQVIA Market Prognosis, Sep 2023; IQVIA Institute, Dec 2023.

Thesis #1 – Optimistic Outlook for Pharma R&D...

Funding for pharma R&D declined as COVID concerns eased in 2022. However, 2023 saw an uptick in spending that is still greater than pre-COVID levels.

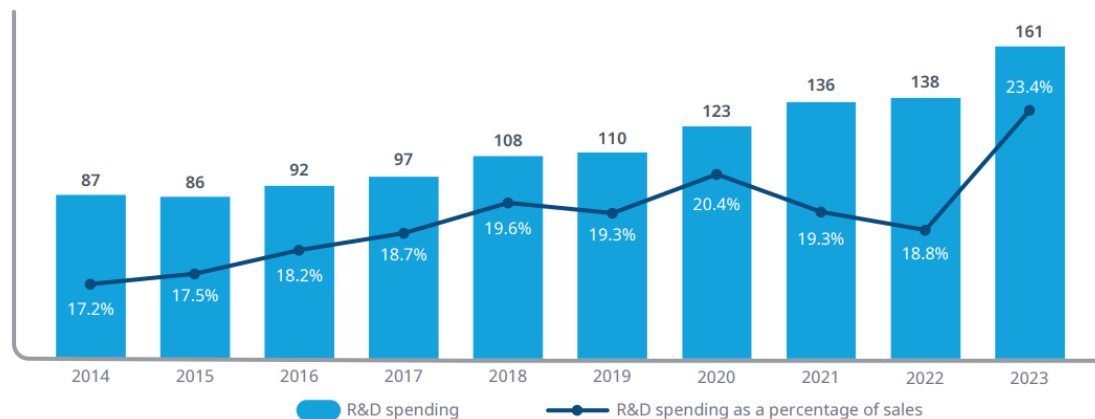
Exhibit 1: Biopharma funding levels US\$Bn, 2014-2023



Source: BioWorld, Jan 2024.

Biopharma funding rebounded in 2023 after a sharp slowdown in 2022 vs. the heightened levels during the pandemic. The level of activity still exceeds the 2019 level, although the mix of funding types has shifted.

Exhibit 7: Large pharma R&D spending as a percentage of sales 2014-2023*, US\$Bn



Source: Company financial statements, IQVIA Institute, Nov 2023.

R&D expenditure by large pharma corporations totaled a record \$161Bn in 2023, an increase of almost 50% since 2018.

Thesis #1 – ...As Well as Pharma Services Outsourcing

The increasing complexity and costs associated with the drug development process will continue to drive growth in pharma services outsourcing. IQVIA’s suite of offerings covers the whole lifecycle of drug development and is well-positioned to benefit.

Discovery & Preclinical Development

Integrated drug discovery & optimization models reduce time & cost to clinic. Development models provide greater certainty as novel drug candidates enter the clinical landscape.

Clinical Trials

Discovery/dev. partners increasingly integral to successful R&D while ensuring data quality and uniformity across complex trials. Increasingly decentralized & patient-centric trials.

Commercialization

Physician specialists want to more deeply understand therapies’ scientific data. Resistance to sales rep visits requiring new ways to communicate info to prescribers.

Contract Manufacturing Organization

Large companies working to manage capacity/avoid large capex, while small/midcap companies striving to be nimble/focused on drug discovery. Increasing use of large molecules, cell/gene therapies.

Pharma Safety & Risk Mgmt

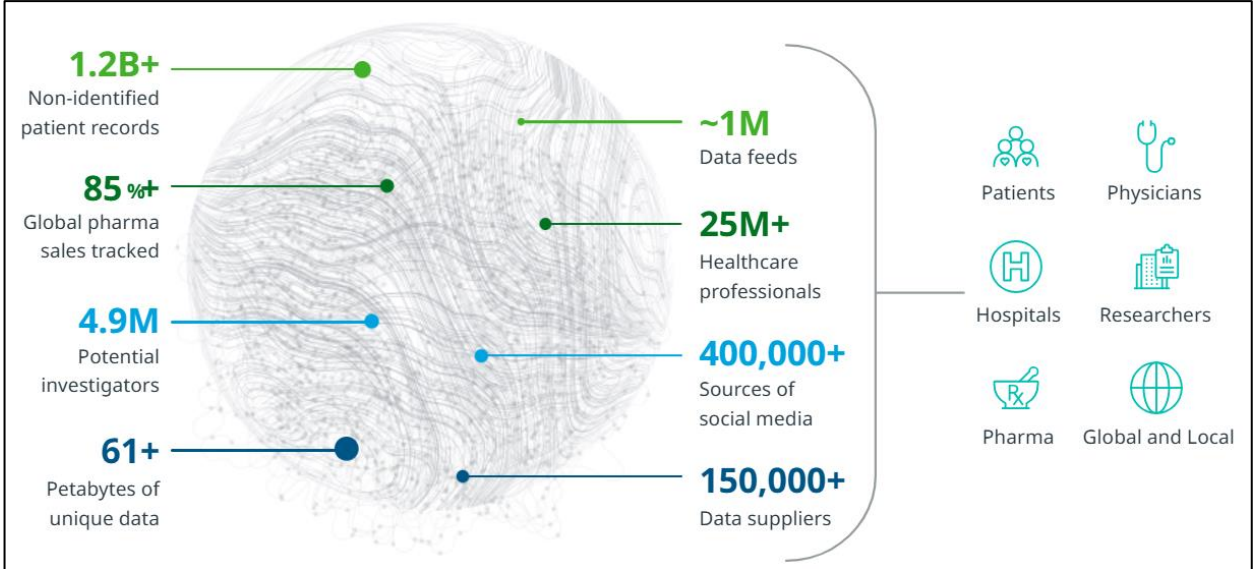
Regulatory/commercial compliance becoming increasingly complex, requiring global coordination. Pharmacovigilance services increasingly outsourced to be cost-effective.

Real World Evidence (RWE): Pharma increasingly using RWE to address regulatory requirements, drive drug development, support outcomes-based contracts, reduce products’ time to market

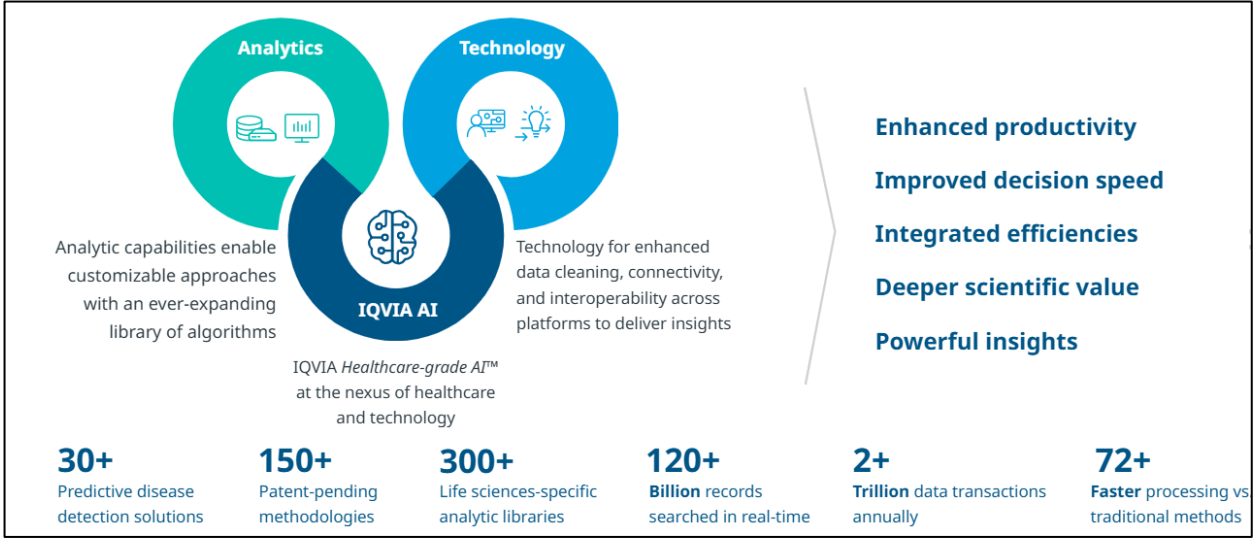
Tech Solutions: Outsourcing key functions (marketing, digital enablement, etc.), search for “one-stop shop” to widen scope of offerings while deepening insight capabilities, increased # of virtual trials

Thesis #2 – IQVIA’s Edge

IQVIA has already established itself as a critical outsourced services provider to a broad range of life sciences and healthcare companies.



Large, proprietary dataset, internal experts, and industry-leading privacy guidelines are irreplicable and attractive to range of end-users



Believe continued development of AI products will strengthen suite. Improved Salesforce partnership expected to launch 2025. High ratings for breadth of services under single umbrella

Source: IQVIA Website & corporate presentations

Thesis #2 – IQVIA Combines Breadth & Depth

IQVIA continues to drive new business growth and displace incumbents across its spectrum of offerings.

Select 2024 New Business Wins

CLINICAL PRODUCTS	COMMERCIAL PRODUCTS	COMPLIANCE, SAFETY, REG PRODUCTS	REAL WORLD PRODUCTS
Planning Suite	Information Management	IQVIA Vigilance Platform	Health Data Apps & AI
Grant Plan	Launch Strategy & Management	Commercial Compliance	Analytics Research Accelerator
Site Suite	Pricing & Market Access	Regulatory Compliance	Expert Ecosystem
Clinical Trial Payments	Brand Strategy & Management	RIM Smart	AI Patient & HCP Profiling- Commercial
Investigator Site Portal	Promotional Engagement	Quality Compliance	AI Patient & Provider Profiling- Med Affairs
One Home for Sites	Performance Management & Insights	SmartSolve eQMS	AI Patient & HCP Profiling- Healthcare
Patient Engagement Suite	Orchestrated Analytics	Safety & Pharmacovigilance	Natural Language Processing
Electronic Clinical Outcome Assessment (eCOA)	Next Best Action		Market Access Insights
Interactive Response Technology (IRT)	Customer Engagement (OCE)		Direct-to-Patient Research
Clinical Data Analytics Solutions	Patient Engagement and Support		

“Within clinical technology, in fact, we continue to expand our recently launched One Home for Sites offering. A biotech client selected IQVIA to increase clinical trial capacity by **streamlining access to multiple vendor sites via our single sign-on platform.**” [3Q24]

“A top 10 client chose IQVIA to improve HCP engagement for a new schizophrenia treatment. **And in this case, we displaced the incumbent by offering a solution that will enable daily alerts based on near-real-time inputs versus the incumbent's weekly frequency**” [3Q24]

“IQVIA was awarded a multi-year contract by a large pharma client to deliver our Next Best Action offering for sales reps across nine countries. **This AI-enabled solution optimizes sales rep engagement activities and enhances their interactions with HCPs**” [3Q24]

“**In the Evidence-Based segment, we secured two large awards where we displaced incumbents based on our global scale and AI capabilities.** We were selected by a US client to conduct two large Phase III oncology studies simultaneously. The client is new to IQVIA and selected us based on our differentiated AI-enabled capabilities as the trial protocol includes complex inclusion/exclusion criteria, unusually large patient cohorts and aggressive enrollment timelines...” [1Q24]

Thesis #2 – Strong Backlog Growth

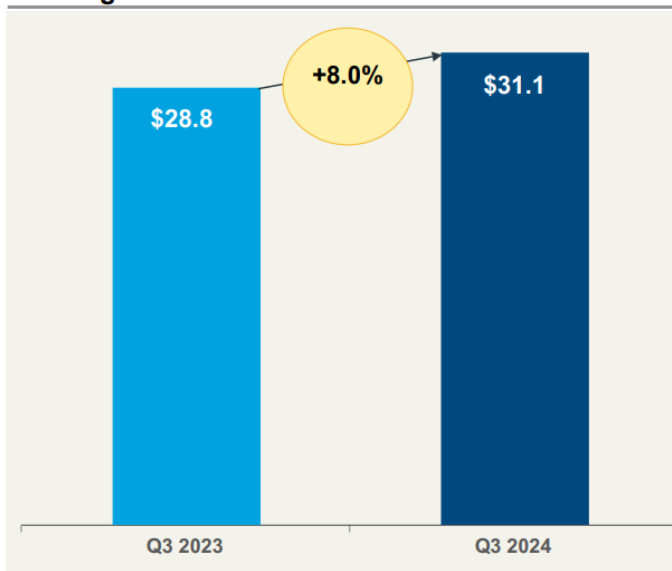
IQVIA’s backlog reached a record \$31.1bn at the end of 3Q24 (8% growth vs. prior year). NTM from backlog was up 5.5% YoY.

“Our quarterly RFP flow continued the same trend we saw in the first half, increasing mid-single digits year-over-year. And finally, our qualified pipeline in the quarter is up across all customer segments and it grew low-double digits overall compared to the prior year. And that is good. Now, just to be balanced, I should point out that in stronger market environments, that qualified pipeline has sometimes been up in high-double digits.” [Ari Bousbib, CEO, 3Q24 Earnings Call]

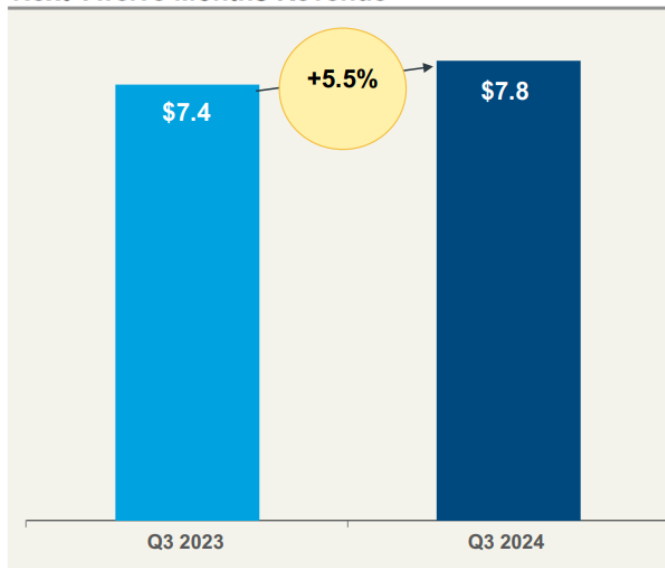
R&D Solutions Backlog and Next Twelve Months Revenue

\$B

Backlog



Next Twelve Months Revenue⁽¹⁾



Dollars are at actual foreign exchange rates.

(1) Next Twelve Months Revenue reflects management’s forecast of the Revenue that will be generated from the backlog as of a given date in the next 12 months.

Thesis #2 – IQVIA’s Edge Will be Enhanced by AI

IQVIA is uniquely positioned to bring high-quality AI tools to the life sciences market given its existing scale and proprietary data assets

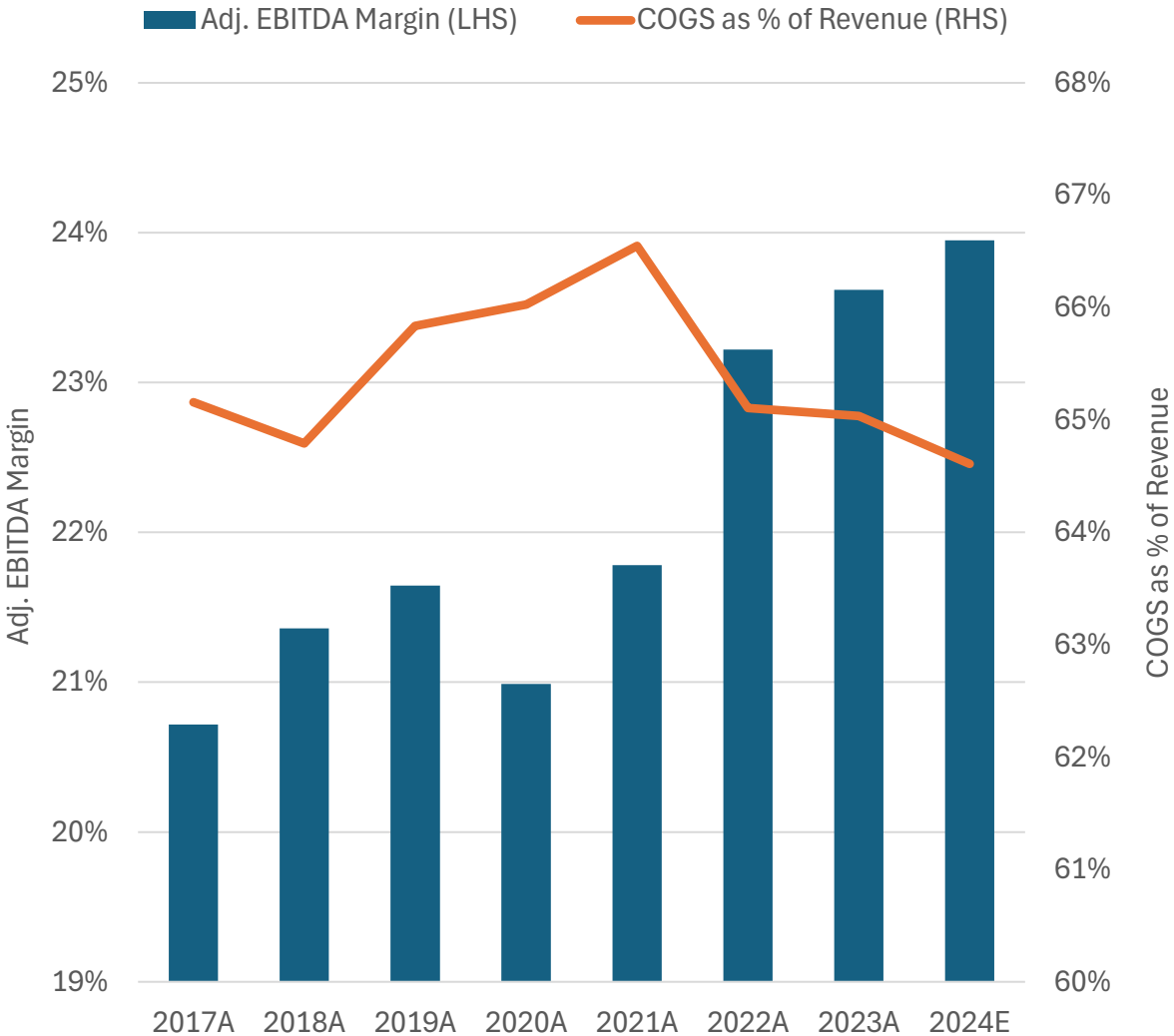
Quote from CEO Ari Bousbib, 1Q24 Earnings Conference Call:

“AI has a massive amount of opportunity in general. And I would say perhaps more limited than people think in healthcare, because data and the ingredients, if you will, are not readily available publicly. You can search for medical literatures for diagnostics. You could look for jurisprudence for legal opinions. But frankly, to identify patients that are best suited for trials, sites that need to be identified for maximal effectiveness and fastest enrollment, that's really, really tough to get information. And if you ask those questions to a chatbot, you are not going to get the answers.

*However, once you are within our environment, then that's a lot more possible. And so, if you think about it, the entire premise of what we set out to do when we merged Quintiles and IMS eight years ago was precisely to **leverage massive amounts of data and analytics and technology to accelerate clinical development timelines**, particularly applicable to oncology, rare diseases and difficult to enroll patients. **With the advent of AI, that set of initiatives becomes even easier. And we've been at it for a while. This is not new to us.** But some of the new tools, as you can imagine, are put to good use within our environment. And some of the wins we've had are the direct results of those capabilities.*

Thesis #3 – Margin Expansion

IQVIA remains cost-disciplined and is poised to continue experiencing margin expansion



Consistent increase in EBITDA margins

COGS remain stable/have declined, even amidst recent growth

Cost discipline demonstrated through historical headcount management decisions, workforce optimization initiatives

Continued incorporation of technology to drive efficiency and productivity gains

Economies of scale

Source: IQVIA filings

Thesis #3 – Margin Expansion

Markets have indicated some concern related to future margin expansion potential. We believe that both concerns are manageable and pose little risk over long-term.

Delays/cancellations of trials

3Q24 earnings revealed:

- 1. One large trial planned by a pharma client had been cancelled because of drug failure*
- 2. Two fast-burning mega-trials from two different pharma clients had been postponed. They are not expected to resume until 2025. This has become more common as pharma companies face cost management pressures, and decision was not linked to IQVIA or company health.*



Sunk costs for IQVIA given resources already expended on startup phase. Two to three quarters “unwind” phase. Management confident trials will resume 2025.

Given the nature of the industry, these are not unusual occurrences. This was a unique quarter in which several large contracts were delayed/cancelled in a single period.

Shift in revenue mix & lower blended margins

Growth in FSP (multiple functional resourcing provider) vs. full-service given that FSP is a lower-margin service



*From 4Q23 earnings call (CFO Ronald Bruehlman):
 “...FSP tends to be somewhat lower margin than full service. Now, you take into account that full service comes with significant pass-through revenues that FSP doesn't. And so, when you look at the average margins, including pass-throughs, they're not that different ... On the other hand, this shift is a very gradual shift that's going on. You're talking about single points of shift, not huge. And it takes place over time, remember, the average trial is four-plus years to complete. So, there really hasn't been any dramatic impact on our margins as a result of that. And, of course, we're working all the time to optimize and take cost out and do things to improve our margins independent of whatever contracts we happen to be signing. And you see in our EBITDA margins, they'd actually continued to improve overall and that's with R&DS being over 50% of our revenue.*

Valuation Overview: Base Case

We project the Research & Development Solutions and Technology & Analytics Solutions segments will continue to drive topline growth and margin expansion

NYSE: IQV	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027		
							Est.	Est.	Est.	Est.	CAGR	CAGR
<i>mn USD, unless noted</i>	FY2018A	FY2019A	FY2020A	FY2021A	FY2022A	FY2023A	FY2024E	FY2025E	FY2026E	FY2027E	FY18-24E	FY18-27E
FYE	12/31/2018	12/31/2019	12/31/2020	12/31/2021	12/31/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026	12/31/2027		
Revenue												
Research & Development Solutions	5,465	5,788	5,760	7,556	7,921	8,395	8,493	8,885	9,520	10,090	8%	7%
%YoY	7.1%	5.9%	(0.5%)	31.2%	4.8%	6.0%	1.2%	4.6%	7.1%	6.0%		
Contract Sales & Medical Solutions	810	814	741	784	743	727	724	736	747	756	-2%	-1%
%YoY	(11.5%)	0.5%	(9.0%)	5.8%	(5.2%)	(2.2%)	(0.4%)	1.6%	1.5%	1.3%		
Technology & Analytics Solutions	4,137	4,486	4,858	5,534	5,746	5,862	6,167	6,621	7,091	7,410	7%	7%
%YoY	12.4%	8.4%	8.3%	13.9%	3.8%	2.0%	5.2%	7.4%	7.1%	4.5%		
Total Revenue	10,412	11,088	11,359	13,874	14,410	14,984	15,384	16,242	17,358	18,257	7%	6%
%YoY	7.3%	6.5%	2.4%	22.1%	3.9%	4.0%	2.7%	5.6%	6.9%	5.2%		
Gross Profit												
Research & Development Solutions	1,744	1,852	1,786	2,253	2,526	2,766	2,868	2,975	3,294	3,575	9%	8%
%YoY	11.7%	6.2%	(3.6%)	26.1%	12.1%	9.5%	3.7%	3.7%	10.7%	8.5%		
Contract Sales & Medical Solutions	128	113	115	132	104	107	105	110	118	120	-3%	-1%
%YoY	(14.8%)	(11.7%)	1.8%	14.8%	(21.2%)	2.9%	(1.6%)	4.8%	6.9%	1.7%		
Technology & Analytics Solutions	1,794	1,823	1,958	2,256	2,398	2,366	2,472	2,735	2,983	3,172	5%	7%
%YoY	7.5%	1.6%	7.4%	15.2%	6.3%	(1.3%)	4.5%	10.7%	9.1%	6.3%		
Total Gross Profit	3,666	3,788	3,859	4,641	5,028	5,239	5,445	5,820	6,395	6,867	7%	7%
<i>Gross Profit Margin %</i>	35.2%	34.2%	34.0%	33.5%	34.9%	35.0%	35.4%	35.8%	36.8%	37.6%		
%YoY	1.1%	-3.0%	-0.6%	-1.5%	4.3%	0.2%	1.2%	1.3%	2.8%	2.1%		
Profitability												
- SG&A	1,716	1,734	1,789	1,964	2,071	2,053	2,102	2,287	2,460	2,533	3%	4%
% of revenue	16.5%	15.6%	15.7%	14.2%	14.4%	13.7%	13.7%	14.1%	14.2%	13.9%		
EBIT	741	777	731	1,393	1,799	1,977	2,159	2,239	2,558	2,885	20%	16%
Margin %	7.1%	7.0%	6.4%	10.0%	12.5%	13.2%	14.0%	13.8%	14.7%	15.8%		
Adj. EBITDA	2,224	2,400	2,384	3,022	3,346	3,539	3,684	3,873	4,255	4,684	9%	9%
Margin %	21.4%	21.6%	21.0%	21.8%	23.2%	23.6%	23.9%	23.8%	24.5%	25.7%		
FCF	795	835	1,343	2,302	1,586	1,500	1,984	2,468	2,607	2,723	16%	15%
Margin %	7.6%	7.5%	11.8%	16.6%	11.0%	10.0%	12.9%	15.2%	15.0%	14.9%		

Valuation (cont.)

Our base case projects ~31% upside to current share price, based on a blended approach combining DCF and Exit EBITDA methods.

Perpetuity Approach	Bull	Base	Bear
PV Stage 1 CF	\$7,109	\$6,438	\$5,056
PV of Terminal Value	\$61,972	\$54,390	\$34,374
Implied Share Price	\$302	\$257	\$141
Implied Upside vs. Current	50%	27%	-30%

Exit EBITDA Approach	Bull	Base	Bear
PV Stage 1 CF	\$7,109	\$6,438	\$5,056
PV of Terminal Value	\$68,145	\$56,852	\$39,506
Implied Share Price	\$336	\$271	\$169
Implied Upside vs. Current	66%	34%	-16%

75/25 Blended Approach	Bull	Base	Bear
Implied Share Price	\$327	\$265	\$158
Implied Upside vs. Current	62%	31%	-22%

Other key assumptions: Terminal growth rate is 4% for bear case, 4.5% for base/bull. 8.9% WACC (discount rate) used throughout. Debt is assumed consistent throughout (slight de-leveraging).

Revenue Growth

Bull Case

'24 to '27E:
~7% CAGRs
for R&DS
and T&AS,
~2% CAGR
for CS&MS

Base Case

'24 to '27E:
~6% CAGRs
for R&DS
and T&AS,
~1% CAGR
for CS&MS

Bear Case

'24 to '27E:
~3% CAGRs
for R&DS
and T&AS;
CS&MS
declines -1%
per year

Margins

Consistently
strong
margin
expansion

Moderate
margin
expansion in
2025,
stronger in
2026-2027

Gross profit
margins
contract in
2025,
remain flat
2026-2027

Exit EV/EBITDA

18x EV/LTM
EBITDA. ~1
turn below
7yr historical
average.

16x EV/LTM
EBITDA. ~3
turns below
7yr historical
average.

14x EV/LTM
EBITDA. ~5
turns below
7yr historical
average.

Risks & Mitigation

We believe IQVIA is well-positioned if these headwinds come to pass

Life sciences industry & high macro sensitivity

- Mission-critical services, backed by contracts
- Scale an advantage vs. competitors
- Growth opportunities beyond life sciences

Continued delay of trials due to cost-cutting measures

- Idiosyncratic, company-specific risks that are generally absorbable on a quarterly basis; depth of relationships with company management
- Impact on IQVIA and competitors

Pricing pressure and increasing tech competition

- Integrability of product offerings
- Access to specialized healthcare expertise
- Regulatory complexity in healthcare industry

Debt management and capital flexibility

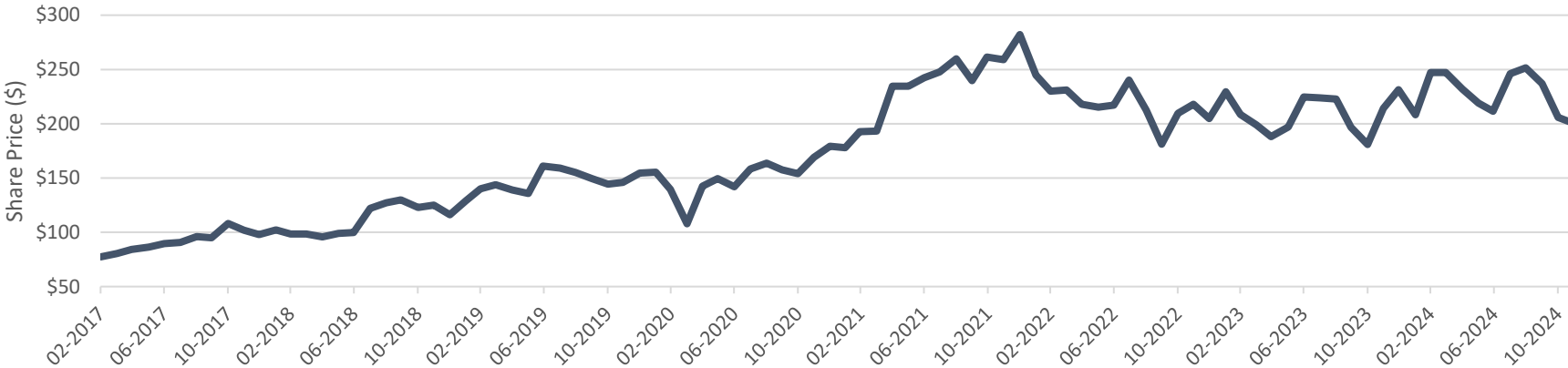
- Refinanced \$2.75bn of near-term maturities in late 2023, effectively extending maturities to 2029 and 2031 at average fixed rate below 4.9 percent after swaps.
- Over 80% debt at fixed interest rates

Appendix

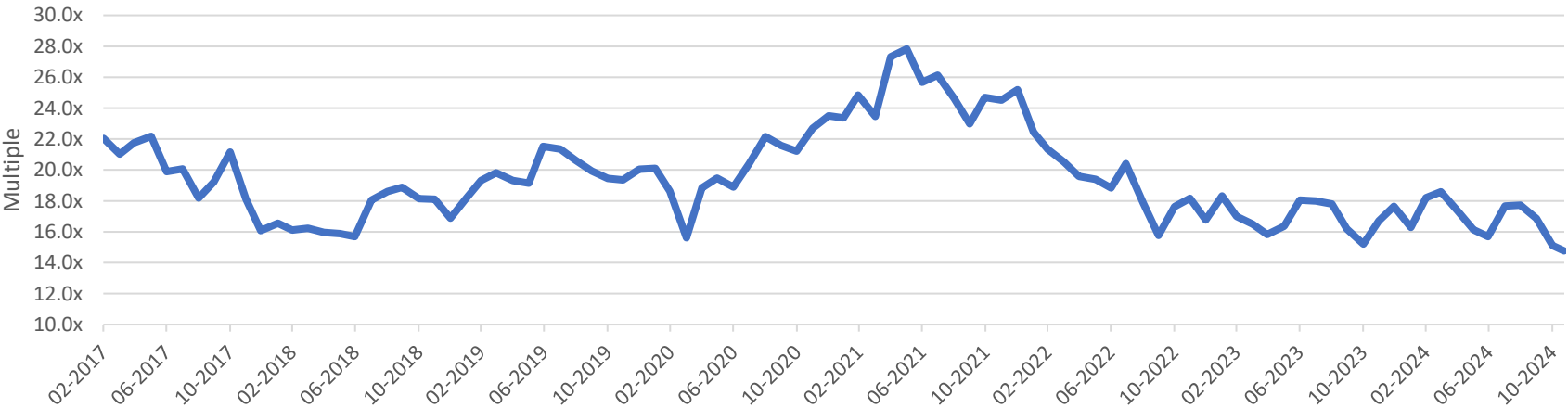
Share Price History and EV/LTM EBITDA Multiple

Average EV/EBITDA multiples for the last five- and seven-year periods are 19.7x and 19.3x, respectively

Share Price History



EV/EBITDA - LTM



Market data as of Friday, November 22, 2024.

Overview of Executive Committee

IQVIA has stable leadership at the top

<p>Ari Bousbib (Chairman, CEO)</p>	<p>Age: 63 Tenure: 8yrs IQVIA + 6yrs IMS Health</p>	<ul style="list-style-type: none"> • Chairman/CEO of IMS Health from 2010-2016, then CEO of IQVIA • Prior to IMS, 14 years in executive leadership at United Technologies Corporation (aerospace, defense, building systems company)
<p>Ronald E. Bruehlman (Exec VP, CFO)</p>	<p>Age: 63 Tenure: 8yrs IQVIA + 6yrs IMS Health</p>	<ul style="list-style-type: none"> • Became CFO in 2020 • Worked with Bousbib at UTC prior to joining IMS Health
<p>W. Richard Staub, III (President, R&D Solutions)</p>	<p>Age: 62 Tenure: 8yrs IQVIA + 3yrs Quintiles</p>	<ul style="list-style-type: none"> • President of R&DS segment since IQVIA merger • Longtime pharma industry professional
<p>Kevin C. Knightly (President, Corporate Strategy & Enterprise Networks)</p>	<p>Age: 64 Tenure: 8yrs IQVIA + 9yrs IMS Health</p>	<ul style="list-style-type: none"> • President of Corporate Strategy & Enterprise Networks since 2022 • Several roles within organization, including President, Tech & Commercial Solutions for IQVIA; Senior VP for Info Offerings at IMS
<p>Eric Sherbet (Exec VP, General Counsel)</p>	<p>Age: 60 Tenure: 6yrs IQVIA</p>	<ul style="list-style-type: none"> • GC & Secretary since 2018 • Prior, GC & Secretary at Patheon, Inventiv Health

Board of Directors

Board comprised of thought leaders across the healthcare and financial landscapes.

Ari Bousbib
(Chairman, CEO)

- CEO since 2016. Prior, CEO of IMS from 2010 until merger with Quintiles. Prior to IMS, held several senior positions at United Technologies Corporation (UTC)
- Also serves on board for Home Depot, Harvard Medical School Health Care Policy Council

Carol J. Burt
(Director)

- On board since 2019. Chairs the Leadership Development and Compensation Committee, member of Audit Committee
- Healthcare investment professional: Burt-Hilliard Investments, Consonance Capital Partners, JPMorgan Chase. Also held an executive role at WellPoint, Inc. (now Anthem, Inc.)

John P. Connaughton
(Director)

- On board since 2016. Member of Leadership Development and Compensation Committee. Previously a board director for Quintiles.
- Healthcare investment professional, most notably at Bain Capital

John G. Danhaki
(Director)

- On board since 2016. Member of Nominating and Governance and the Leadership Development and Compensation Committees. Previously a board director of IMS Health.
- Healthcare investment professional, most notably at Leonard Green & Partners

James A. Fasano
(Director)

- On board since 2016. Chair of Audit Committee. Previously a board director of IMS Health.
- Investment professional, most notably as managing director for Canada Pension Plan Investment Board

Board of Directors (cont.)

Board comprised of thought leaders across the healthcare and financial landscapes.

Colleen Goggins
(Director)

- *On board since 2017. Chairs the Nominating and Governance Committee, member of Audit Committee. Leads sustainability oversight for the board.*
- *Healthcare industry professional. Notable roles at Johnson & Johnson, among other board positions.*

John M. Leonard
(Director)

- *On board since 2016. Leader Director for the board. Member of Audit and Nominating and Governance Committees. Previously a board director for Quintiles*
- *Healthcare industry professional. Notable roles at Intellia Therapeutics, AbbVie, Abbott Laboratories*

Leslie Wims Morris
(Director)

- *On board since 2022. Member of Nominating and Governance Committee*
- *Finance professional. Has held several senior-level positions within JPMorgan (currently President of Private Label Captive Finance) and serves on investment committee*

Todd B. Sisistky
(Director)

- *On board since 2016. Member of Nominating and Governance Committee and Leadership Development and Compensation Committee. Previously a board director of IMS Health*
- *Healthcare investment professional, currently at TPG*

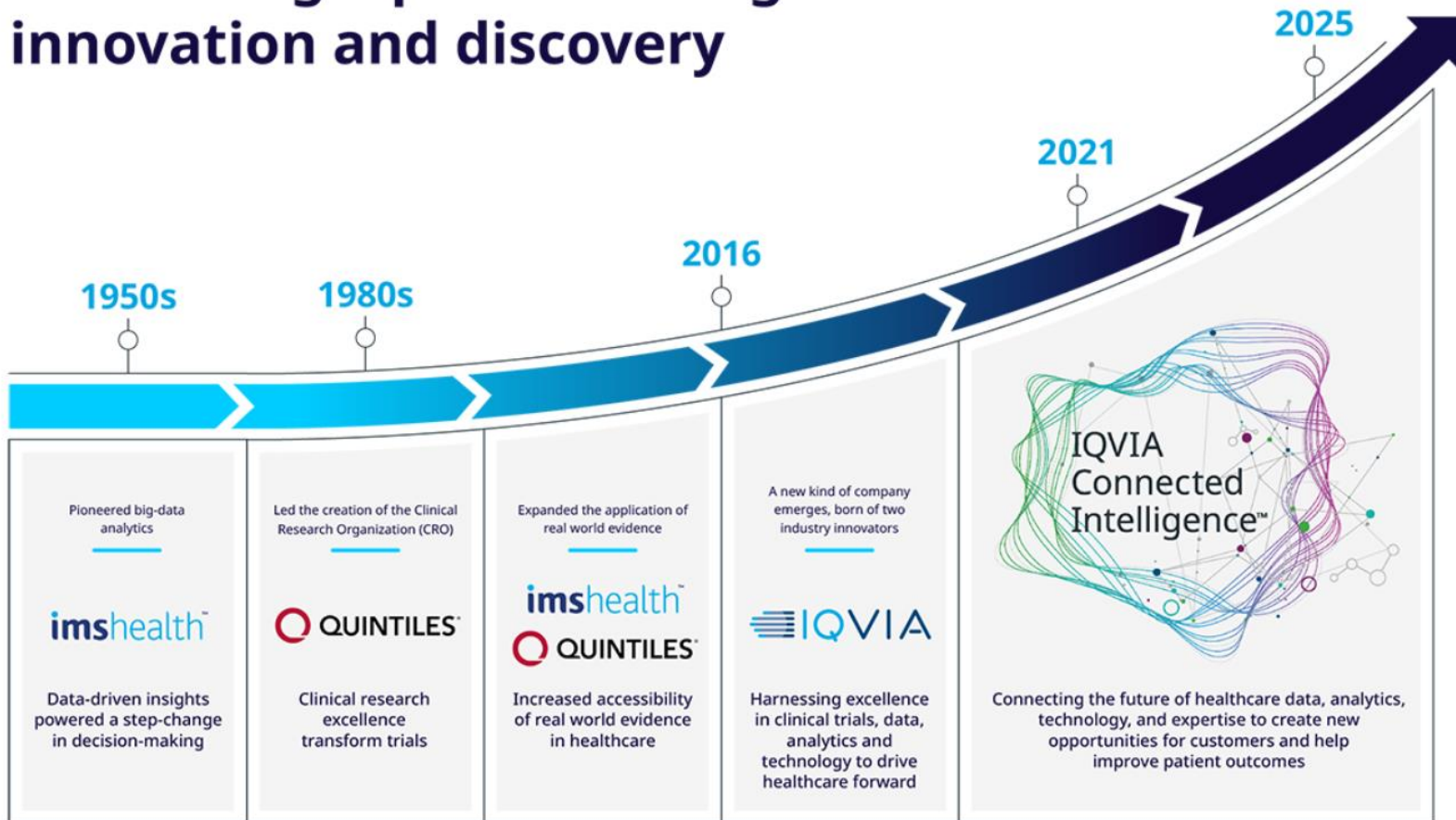
Sheila A. Stamps
(Director)

- *On board since 2022. Member of Audit Committee.*
- *Finance and investment professional. Roles include DBI, NYS Common Retirement Fund, New York State Insurance Fund*

IQVIA's Heritage

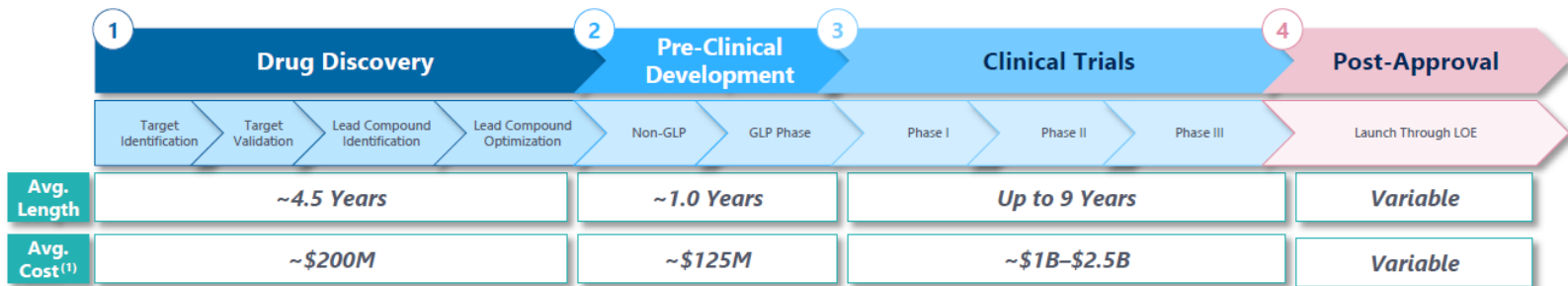
IMS Health, established in 1954, spearheaded healthcare data analytics while Quintiles, founded in 1982, specialized in clinical trials and research services. In 2016, a strategic union brought together the data-driven insights of IMS Health and the clinical research excellence of Quintiles

Continuing a proud heritage of innovation and discovery



The Drug Development Process is Long, Expensive, Complex

Pharma services companies like IQVIA provide essential outsourcing support across the full spectrum of drug development and commercialization, increasing overall efficiency of the process.



Due to the time, cost, and complexity of the drug development process, many pharma and biotech firms are expanding their use of outsourced service providers to help control costs, navigate the complex regulatory landscape, and streamline the efficiency of their operations to bring safe and effective drugs to patients worldwide in a timely and cost-effective manner

Key Pharma Services Segments

1 2 3

CRO

Support pharma and biotech companies with research methodology design and execution throughout the drug discovery, pre-clinical, and clinical trial stages

- ✓ Drug Discovery
- ✓ Clinical
- ✓ Preclinical
- ✓ Site Networks
- ✓ Lab Services

3 4

CDMO/Supply Chain

Aid in formulation, compounding, materials sourcing, manufacturing, and distribution of pharma and biotech products—active during the clinical and commercial stages

- ✓ Drug Development
- ✓ Cold Storage
- ✓ Bioprocessing
- ✓ Packaging
- ✓ API Dev and Mfg.
- ✓ Finished Dose Mfg.

3 4

Commercialization

Support the late clinical and post-approval phases of a product's lifecycle—bringing products to market, selling the product, and collecting real-world evidence

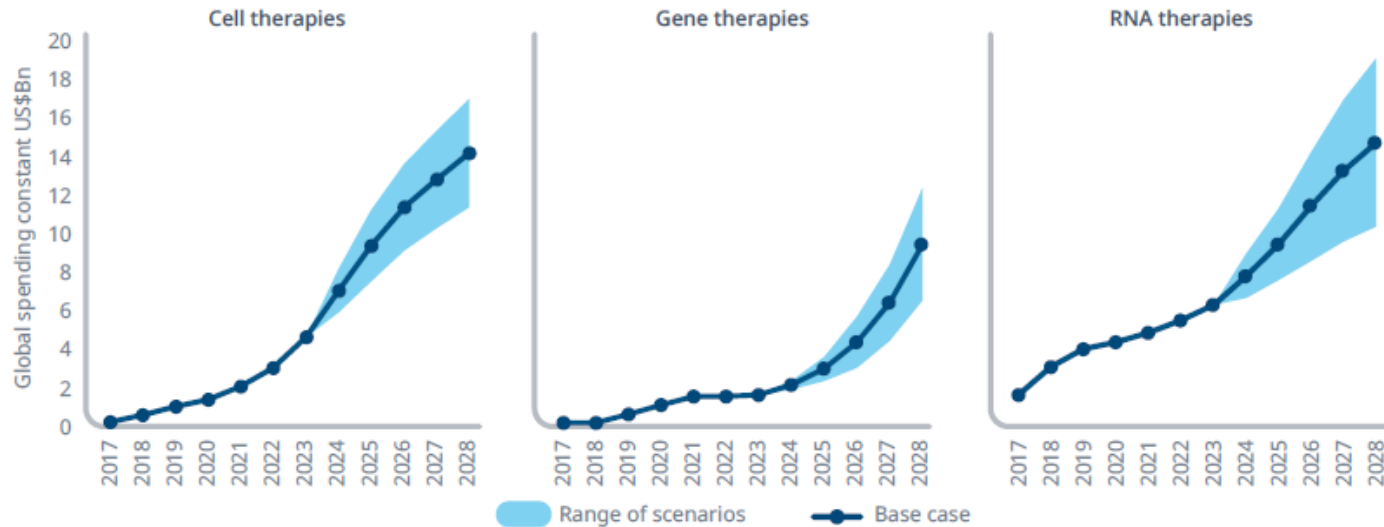
- ✓ Consulting
- ✓ Marketing
- ✓ Medical Affairs
- ✓ Market Access
- ✓ Data/Analytics
- ✓ Outsourced Services

Sources: Food and Drug Administration, National Center for Biotechnology Information, NorthEast BioLab, Taconic Insights.
(1) Average cost of clinical trials is highly dependent on spending associated with drugs that end up failing at some point in the trials. These numbers do not include costs associated with failed drugs.

Outlook Across Therapeutic Types

Cell and gene therapies have differing spending outlook and large uncertainties while RNA therapies have the largest potential

Exhibit 45: Cell, gene and RNA therapeutics



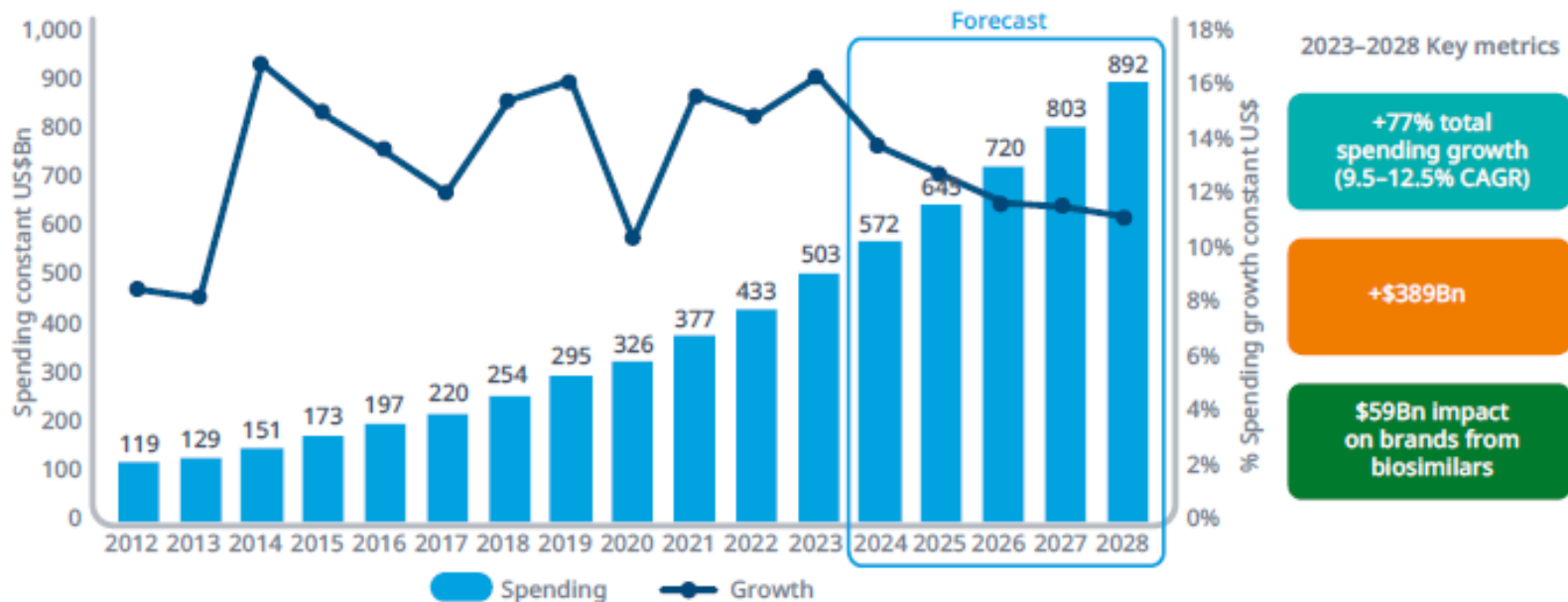
Source: Company Financials; IQVIA Institute, Dec 2023.

- While the expectations vary by type of drug within these next-generation biotherapeutics, generally the expectation is that spending will rise from the current \$10Bn globally to approximately \$33Bn by 2028, with more of the spending in cell and RNA therapies and slightly less for gene therapies.
- The continued flow of new therapies of all three types, combined with relatively slow uptake of approved drugs, are market characteristics that are expected to continue. These products will see market access limitations across geographies, with spending and usage mostly limited to major developed markets.
- Lower uptake, likely due to more limited reimbursement, could result in lower levels or delayed usage and spending and result in more risk-sharing agreements, outcomes-based contracts or other negotiated price concessions.

Global Biotech Spending & Growth

Global biotech spending is set to exceed \$890Bn by 2028, with growth slowing to 9.5–12.5% due to the impact of biosimilars

Exhibit 35: Global biotech spending and growth



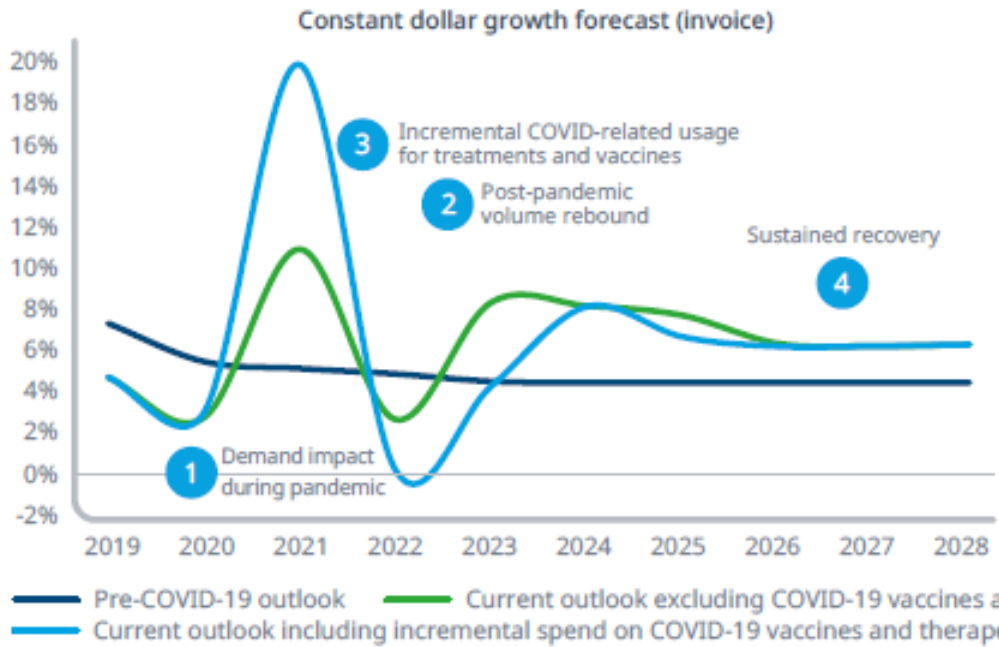
Source: IQVIA Institute, Dec 2023.

- Global spending on biotech drugs — those created through recombinant DNA technology — expected to reach \$892Bn by 2028, about 39% of global medicine spending.
- Spending for biotech drugs will include \$20–24Bn by 2028 from cell and gene therapies, which currently represent approximately \$6Bn and are expected to grow predominately from wider use, especially in developed markets.
- Biotech drugs will see a 77% aggregate increase over five years with a 9.5–12.5% CAGR through 2028, adding \$389Bn globally.

Current Growth Outlook vs. Pre-COVID Outlook

Global market growth will significantly exceed the pre-pandemic outlook even as COVID-19 vaccine and therapeutic usage declines

Exhibit 17: Comparison of current outlook to pre-COVID-19 outlook



Key events in the outlook

- 2020: Growth -3.0% slower than pre-pandemic projection (-\$39Bn)
- 2021: +14.2% higher growth including vaccines and therapeutics compared to spending without them
- 2022/3: COVID vaccine and therapeutic use has slowed, resulting in lower growth
- Sustained recovery of market will drive long-term growth 1-2% higher than the pre-pandemic outlook

Source: IQVIA Market Prognosis, Sep 2023; IQVIA Institute, Dec 2023.

- The higher growth in 2023 driven by non-COVID-19 therapies is expected to continue, raising the five-year outlook by 2%.
- Including updated estimates, the five-year CAGR to 2028 is expected to be 5-8% compared to 3-6% prior to the pandemic and driven predominantly by higher projections for non-COVID-19 spending.

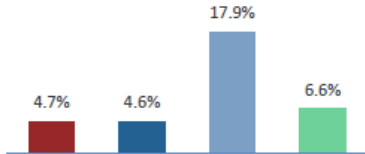
Public Pharma Tech & Services Operating Metrics

IQVIA and competitors are less richly valued relative to other categories of pharma tech

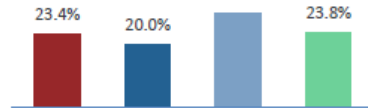
Public Company – Operating Metrics

As of June 12, 2024

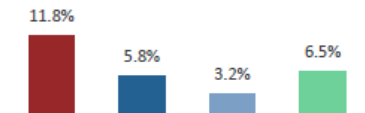
Median LTM Revenue Growth



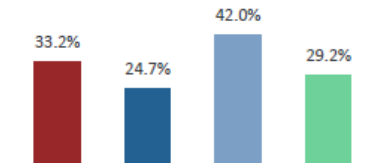
Median LTM EBITDA Margin



Median NTM Revenue Growth



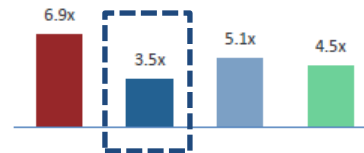
Median LTM Rule of 40 (Growth + Margin)



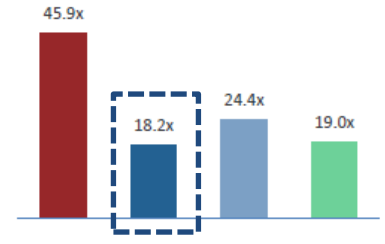
Public Company – Valuation Metrics

As of June 12, 2024

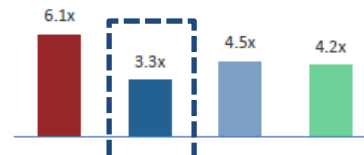
Median EV / LTM Revenue



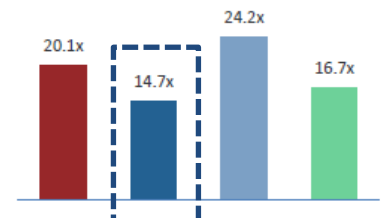
Median EV / LTM EBITDA



Median EV / NTM Revenue



Median EV / NTM EBITDA



Pharma Tech

CROs

CDMOs

Drug Delivery

IQVIA stands out vs. most companies in this landscape through scale

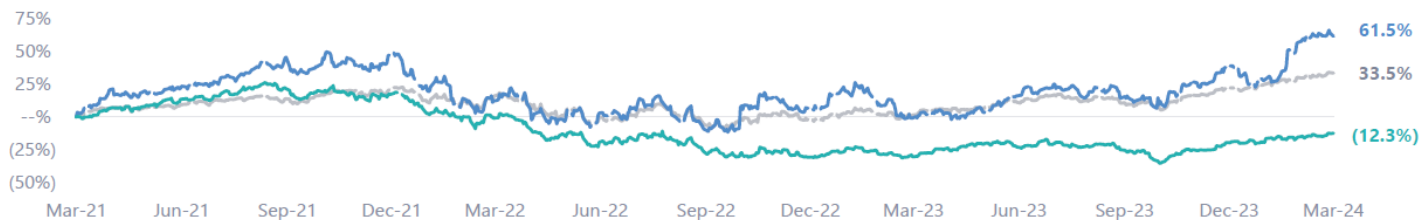
CROs like IQVIA represent an attractive segment of the pharma services market

Relevant Public Company Performance

Following a peak in 2021, CRO and CDMOs have maintained valuations above pre-COVID-19 levels.

CROs Continue to Outperform the Broader Market

	3Y	2Y	YTD	L6M
CRO ⁽¹⁾	61.5%	45.8%	16.4%	37.7%
CDMO ⁽²⁾	(12.3%)	(12.1%)	9.3%	17.3%
S&P 500	33.5%	14.9%	10.0%	20.3%



EV/LTM EBITDA Multiples



Period	Average EV/LTM EBITDA ⁽³⁾	
	CRO	CDMO
2019	18.2x	9.0x
2020	19.3x	12.0x
2021	24.9x	15.7x
2022	19.0x	11.5x
2023	16.5x	11.1x
2024	18.0x	12.4x

Source: S&P Capital IQ data as of 03/25/2024.

(1) CRO peer group includes Charles River Laboratories, Fortrea, ICON, IQVIA, and Medpace.

(2) CDMO peer group includes Evonik, Fujifilm, Lonza, Piramal, and Siegfried.

(3) Multiples represent the average of each calendar year.