

The logo for KROLL, featuring the word "KROLL" in a bold, blue, sans-serif font. The letter "O" is stylized with a green leaf-like shape on its right side. The background of the entire page is a photograph of a modern industrial factory floor with various machines, overhead cranes, and bright lighting. A green triangle is in the top right corner, and a blue triangle is in the bottom left corner.

KROLL

Industrial Technology

Industry Insights

Fall 2022

Executive Summary

Year-to-date market performance has been driven primarily by multiple contraction whereas earnings expectations for the year have remained stable. Increasing uncertainty from a variety of sources has coincided with a slight decrease in the pace of deal making.

The fundamental backdrop for the sector remains strong. Investors and corporate executives recognize the importance of investment in technologies to drive productivity growth. As OEMs have incorporated more intelligence into their products, they have been able to capture and monetize their customers' operating data to deliver improved performance through offerings like condition monitoring and preventative maintenance, often sold as a service after the initial up-front product sale.

Spotlight: Warehouse Automation

Corporates facing supply chain constraints, labor shortages and rising costs are increasingly implementing digital and physical automation tools to reduce manual processes and improve their focus on customers and vendors.

Smart warehouse technologies increase the efficiency, accuracy, security and safety of material and supply handling, management, storage and distribution. These benefits underpin the projected ~8% CAGR in the global warehouse automation market, from ~\$20 billion in 2021 to ~\$40 billion in 2030.

The importance of the technologies in stabilizing supply chains and the significant room for consolidation will continue to drive M&A opportunities for investors.

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Industrials Q2 2022 Earnings Themes

Sales and backlog growth remain robust

Q2 multi-industry organic sales growth averaged 10.1% YoY (vs. 11.7% in 1Q) – vs. 9.1% CPI (5.9% core) for 12 months ended June 2022

Backlog growth driven by good order rates (customers often ordering earlier) and continued supply chain headwinds that have delayed product shipments

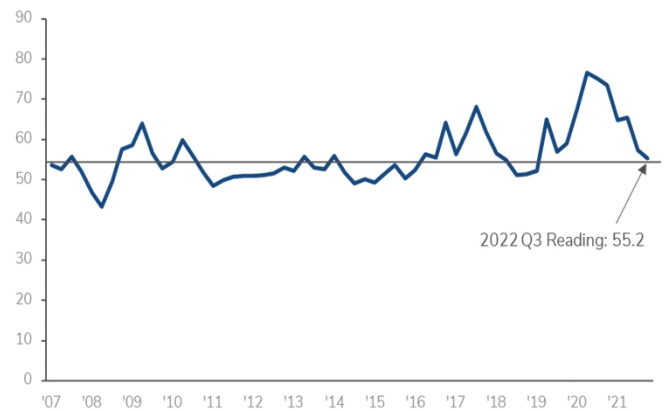
Investors focused on sustainability of margins vs. inflationary pressures

Short-cycle industrial distributors seeing continued good demand, 19% YoY growth in July (Grainger, Wesco, Fastenal)

Supply chains constrained, though improving. Best supplier delivery performance since July 2020

The ISM manufacturing PMI Supplier Deliveries Index indicates supplier delivery times, though still delayed, are improving

ISM Manufacturing PMI Supplier Deliveries



Working capital impacts on free cash flow in focus

Seen in accounts receivable (strong sales growth) and inventory (input constraints and supply chain bottlenecks)

U.S. dollar strength: Highest level in two years versus major peers

Headwind to companies with FX exposure – (e.g., Flowserve, Danaher, Johnson Controls, Dover)

Inflation continues in labor and freight

Baltic Dry Index hit a two-year low in September – lower port congestion, metal and grain cargos

Select Public Industrial Technology Companies

Automation

Automation Majors



Automation Components



Test and Measurement



Flow Control



Industrial Software

Industrial Software



Diversified Industrials

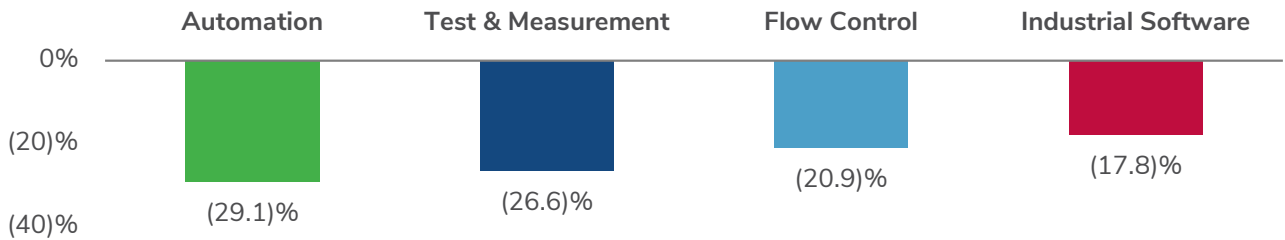


Public Company Valuation Trends

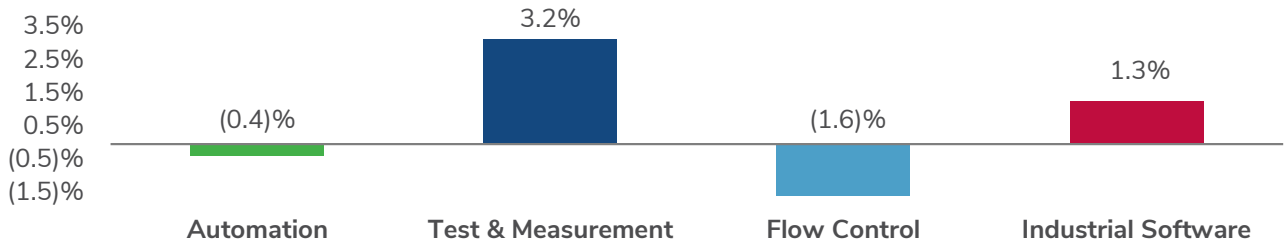
Market performance has been characterized by stable earnings expectations (middle chart) and multiple contraction (bottom chart)

Investor focus in 2H 2022 will be on potential for further reduction in forward earnings as debate about the potential for a U.S. recession continues.

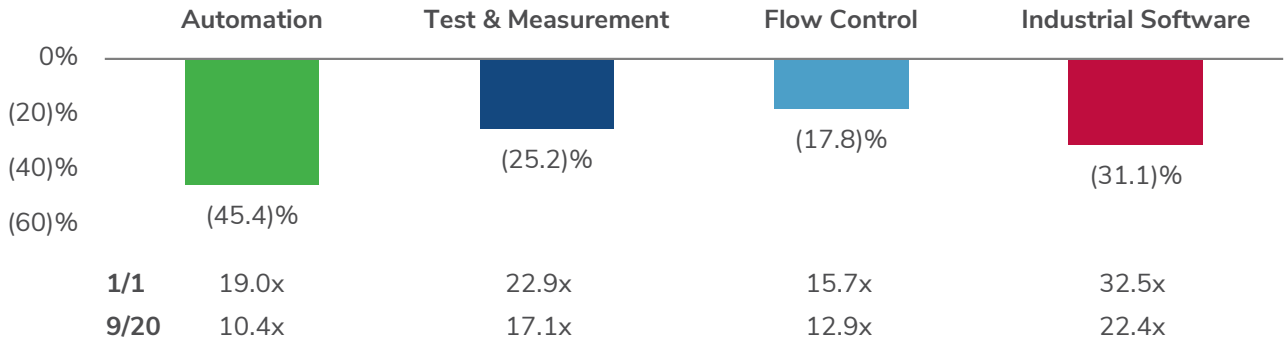
Stock Price % Change (Jan – Sept)



Change in 2022E EBITDA Estimates (Jan –Sept)



Change in EV/2022 EBITDA (Jan-Sept)



Public Companies Trading Analysis

Selected Public Companies Analysis

(\$ in millions, except per share data)

	MARKET DATA				LTM OPERATING PERFORMANCE						ENTERPRISE VALUE AS MULTIPLE OF			
	Price at 09/20/22	% of 52-Week High	Equity Value	Enterprise Value	Revenue	EBITDA	Gross Margin	EBITDA Growth	EBITDA Margin	Net Debt / EBITDA	LTM EBITDA	2022P EBITDA	LTM Revenue	2022P Revenue
Automation Majors														
ABB Ltd	\$27.20	73.4%	\$49,713	\$55,496	\$28,811	\$4,364	32.3%	26.6%	15.1%	1.3x	12.7x	11.3x	1.9x	1.9x
AutoStore Holdings Ltd.	1.19	26.5%	4,118	4,435	466	136	61.7%	NM	29.1%	2.3	NM	NM	NM	NM
Cognex Corporation	41.72	45.3%	7,234	6,909	1,086	333	71.3%	(5.1%)	30.7%	NM	20.7	28.0	6.4	7.2
Emerson Electric Co.	79.60	79.2%	47,067	62,642	19,216	4,244	40.9%	8.6%	22.1%	2.3	14.8	12.9	3.3	3.1
Fanuc Corporation	152.22	84.1%	29,119	25,338	5,587	1,681	39.5%	15.2%	30.1%	NM	15.9	14.2	4.8	4.4
Fortive Corporation	63.91	80.0%	22,726	25,731	5,516	1,377	57.4%	14.3%	25.0%	2.2	18.7	17.3	4.7	4.4
Honeywell International Inc.	178.63	78.3%	120,342	132,414	34,459	8,375	32.1%	0.4%	24.3%	1.4	15.8	14.8	3.8	3.7
Rockwell Automation, Inc.	242.16	68.2%	27,954	32,192	7,442	1,370	39.4%	2.2%	18.4%	2.9	23.5	18.7	4.3	4.0
Sandvik AB (publ)	14.53	59.7%	18,229	22,086	10,970	2,359	39.3%	22.9%	21.5%	1.7	9.9	9.2	2.1	2.2
Schneider Electric S.E.	118.62	66.3%	65,847	78,843	32,624	6,073	40.6%	13.3%	18.6%	1.6	13.6	11.9	2.5	2.4
Siemens Aktiengesellschaft	101.10	63.9%	79,827	126,814	71,267	10,208	35.9%	22.4%	14.3%	4.2	13.0	10.3	1.9	1.8
SMC Corporation	441.20	79.7%	28,828	23,810	5,563	1,910	50.3%	33.2%	34.3%	NM	13.1	12.2	4.5	4.3
Symbotic Inc.	12.74	44.7%	705	359	441	(112)	16.1%	7.1%	(25.4%)	NM	NM	NM	0.8	0.8
YASKAWA Electric Corporation	31.38	75.3%	8,203	8,371	3,735	556	35.2%	45.8%	14.9%	0.2	16.8	14.3	2.5	2.3
Median		70.8%	\$28,391	\$25,534	\$6,515	\$1,796	39.5%	14.3%	21.8%	2.0x	15.3x	13.6x	3.3x	3.1x
Automation Components														
Allied Motion Technologies Inc.	\$29.02	64.9%	\$464	\$688	\$438	\$49	30.6%	NM	11.3%	4.5x	14.0x	11.0x	1.6x	1.4x
Altra Industrial Motion Corp.	36.03	57.9%	2,344	3,283	1,949	360	35.0%	(6.7%)	18.4%	2.6	9.1	8.5	1.7	1.7
AMETEK, Inc.	120.53	81.4%	27,671	29,999	5,918	1,723	34.6%	18.9%	29.1%	1.4	17.4	16.8	5.1	4.9
IMI plc	12.75	59.4%	3,296	4,161	2,346	425	46.2%	1.8%	18.1%	2.2	10.4	8.4	1.9	1.8
Nidec Corporation	64.11	66.4%	36,850	40,071	14,799	2,061	20.5%	6.7%	13.9%	1.6	20.5	18.3	2.9	2.7
Parker-Hannifin Corporation	265.16	78.0%	34,047	45,112	15,862	3,478	28.3%	16.9%	21.9%	3.2	13.0	12.6	2.8	2.8
Regal Rexnord Corporation	144.85	81.9%	9,629	11,247	4,757	806	30.6%	45.9%	17.0%	2.0	13.9	10.2	2.4	2.1
Median		68.6%	\$17,937	\$16,090	\$4,649	\$1,140	34.8%	14.3%	18.3%	2.1x	14.0x	12.6x	2.7x	2.5x
Test and Measurement														
AMETEK, Inc.	\$120.53	81.4%	\$27,671	\$29,999	\$5,918	\$1,723	34.6%	18.9%	29.1%	1.4x	17.4x	16.8x	5.1x	4.9x
Amphenol Corporation	73.17	82.7%	43,524	47,129	11,934	2,809	31.5%	21.7%	23.5%	1.3	16.8	16.0	3.9	3.8
Halma plc	22.84	61.2%	8,633	8,947	2,005	455	50.3%	11.1%	22.7%	0.8	22.7	19.5	5.1	4.7
Itron, Inc.	48.30	59.4%	2,180	2,496	1,880	69	27.5%	(62.8%)	3.7%	4.3	NM	26.6	1.3	1.3
Keyence Corporation	357.36	68.2%	86,668	79,539	5,756	3,231	82.3%	33.9%	56.1%	NM	26.1	24.4	NM	NM
Keysight Technologies, Inc.	165.96	79.4%	29,673	29,850	5,271	1,578	64.1%	17.1%	29.9%	0.1	18.9	18.1	5.7	5.5
Roper Technologies, Inc.	382.35	75.7%	40,533	45,111	6,023	2,300	67.6%	20.9%	38.2%	2.0	19.6	21.6	7.5	8.6
Spectris plc	31.54	66.3%	3,319	3,515	1,610	269	56.4%	59.6%	16.7%	0.8	13.9	12.6	2.3	2.4
TE Connectivity Ltd.	123.36	74.1%	39,455	42,940	15,740	3,702	32.9%	14.2%	23.5%	0.9	11.6	11.7	2.7	2.7
Teledyne Technologies Incorporated	372.06	75.3%	17,436	21,241	5,364	1,228	41.2%	56.3%	22.9%	3.1	17.3	16.5	4.0	3.9
Median		74.1%	\$27,671	\$29,850	\$5,271	\$1,578	34.8%	18.9%	23.5%	1.3x	17.1x	16.8x	3.3x	3.3x

Note: Revenue and EBITDA multiples greater than 10.0x and 35.0x, respectively, shown as "NM"

Public Companies Trading Analysis (Cont'd)

Selected Public Companies Analysis

(\$ in millions, except per share data)

	MARKET DATA				LTM OPERATING PERFORMANCE						ENTERPRISE VALUE AS MULTIPLE OF			
	Price at 09/20/22	% of 52-Week High	Equity Value	Enterprise Value	Revenue	EBITDA	Gross Margin	EBITDA Growth	EBITDA Margin	Net Debt / EBITDA	LTM EBITDA	2022P EBITDA	LTM Revenue	2022P Revenue
Flow Control														
Donaldson Company, Inc.	\$52.40	83.0%	\$6,438	\$6,893	\$3,307	\$538	32.3%	10.3%	16.3%	0.8x	12.8x	11.8x	2.1x	2.0x
Dover Corporation	125.02	67.9%	17,546	20,361	8,218	1,611	36.6%	6.4%	19.6%	1.7	12.6	11.4	2.5	2.4
Flowserve Corporation	27.68	72.1%	3,618	4,665	3,489	300	28.2%	(36.2%)	8.6%	3.4	15.5	12.4	1.3	1.3
Franklin Electric Co., Inc.	85.71	88.4%	3,968	4,298	1,894	265	33.9%	31.9%	14.0%	1.2	16.2	14.0	2.3	2.1
Graco Inc.	63.59	78.4%	10,754	10,504	2,069	598	50.6%	4.1%	28.9%	NM	17.6	16.6	5.1	5.0
IDEX Corporation	209.39	87.1%	15,804	16,508	2,974	843	44.9%	23.9%	28.4%	0.8	19.6	19.0	5.6	5.3
IMI plc	12.75	59.4%	3,296	4,161	2,346	425	46.2%	1.8%	18.1%	2.2	10.4	8.4	1.9	1.8
Ingersoll Rand Inc.	48.46	77.4%	19,538	21,087	5,521	1,155	38.4%	18.2%	20.9%	1.3	18.3	15.1	3.8	3.7
ITT Inc.	71.79	68.0%	5,937	6,055	2,835	529	31.3%	1.2%	18.6%	0.2	11.5	10.3	2.1	2.0
Mueller Water Products, Inc.	10.75	61.9%	1,684	2,004	1,212	199	30.6%	(5.8%)	16.4%	1.6	10.1	9.7	1.7	1.6
Nordson Corporation	224.03	82.3%	12,817	13,615	2,506	737	55.6%	6.8%	29.4%	1.1	18.5	16.7	5.4	5.3
Parker-Hannifin Corporation	265.16	78.0%	34,047	45,112	15,862	3,478	28.3%	16.9%	21.9%	3.2	13.0	12.6	2.8	2.8
Pentair plc	43.59	54.4%	7,169	8,026	4,022	746	33.7%	14.2%	18.6%	1.1	10.8	9.8	2.0	1.9
Sulzer Ltd	59.30	41.3%	2,008	2,310	3,327	306	30.5%	(10.1%)	9.2%	1.0	7.6	5.7	0.7	0.7
The Gorman-Rupp Company	25.95	55.1%	677	1,093	418	51	24.7%	9.2%	12.2%	8.1	21.4	NM	2.6	2.1
The Weir Group PLC	16.73	75.6%	4,336	5,446	2,587	424	35.9%	7.9%	16.4%	2.8	13.7	10.8	2.2	2.1
Watts Water Technologies, Inc.	131.94	62.2%	4,395	4,366	1,919	342	43.3%	19.5%	17.8%	NM	12.8	12.5	2.3	2.2
Xylem Inc.	96.47	70.9%	17,382	18,748	5,224	785	37.4%	(10.3%)	15.0%	1.7	23.9	21.3	3.6	3.5
Median		71.8%	\$5,166	\$5,750	\$2,546	\$477	34.9%	8.6%	18.3%	1.3x	13.3x	12.5x	2.3x	2.1x
Industrial Software														
Altair Engineering Inc.	\$47.09	56.8%	\$3,765	\$3,679	\$549	\$66	78.4%	73.0%	12.1%	NM	NM	NM	6.7x	6.6x
Altium Limited	24.11	79.4%	3,174	2,989	152	51	50.1%	37.5%	33.3%	NM	NM	NM	NM	NM
ANSYS, Inc.	241.43	58.3%	21,021	21,389	1,996	672	90.3%	14.6%	33.7%	0.5x	31.8x	24.1x	NM	NM
Aspen Technology, Inc.	231.01	99.9%	14,885	14,790	482	147	58.6%	NM	30.4%	NM	NM	29.8	NM	NM
AVEVA Group plc	34.86	74.5%	10,505	11,076	1,558	170	80.4%	(14.6%)	10.9%	3.9	NM	25.4	8.2	7.4
Bentley Systems, Incorporated	33.20	49.6%	10,290	12,075	1,063	202	78.4%	(17.7%)	19.0%	8.8	NM	32.8	NM	NM
Cadence Design Systems, Inc.	167.19	85.8%	45,788	45,107	3,283	1,134	89.7%	41.8%	34.5%	NM	NM	30.3	NM	NM
Dassault Systèmes SE	36.39	64.0%	47,817	48,318	5,472	1,347	84.0%	15.7%	24.6%	0.4	NM	23.3	9.2	8.7
Hexagon AB (publ)	10.08	73.2%	27,157	30,763	462	145	64.6%	(1.4%)	31.5%	NM	NM	NM	NM	NM
National Instruments Corporation	39.88	86.7%	5,277	5,690	1,569	240	70.0%	36.4%	15.3%	1.7	23.7	17.0	3.6	3.4
Pason Systems Inc.	10.06	78.1%	826	686	209	72	60.4%	NM	34.7%	NM	9.8	6.5	3.4	2.8
PTC Inc.	114.72	84.4%	13,476	14,773	1,906	491	79.5%	26.4%	25.7%	2.6	30.1	19.3	7.8	7.6
Roper Technologies, Inc.	382.35	75.7%	40,533	45,111	6,023	2,300	67.6%	20.9%	38.2%	2.0	19.6	21.6	7.5	8.6
Trimble Inc.	58.92	64.1%	14,592	15,650	3,762	782	58.2%	5.2%	20.8%	1.4	20.0	16.4	4.2	4.1
Median		75.7%	\$13,476	\$14,773	\$1,558	\$202	78.4%	20.9%	30.4%	2.0x	23.7x	23.7x	7.5x	7.4x
Diversified Industrials														
ABB Ltd	\$27.20	73.4%	\$49,713	\$55,496	\$28,811	\$4,364	32.3%	26.6%	15.1%	1.3x	12.7x	11.3x	1.9x	1.9x
Cognex Corporation	41.72	45.3%	7,234	6,909	1,086	333	71.3%	(5.1%)	30.7%	NM	20.7	28.0	6.4	7.2
Emerson Electric Co.	79.60	79.2%	47,067	62,642	19,216	4,244	40.9%	8.6%	22.1%	2.3	14.8	12.9	3.3	3.1
Fortive Corporation	63.91	80.0%	22,726	25,731	5,516	1,377	57.4%	14.3%	25.0%	2.2	18.7	17.3	4.7	4.4
General Electric Company	67.05	57.7%	73,524	92,528	71,457	7,827	26.6%	NM	11.0%	2.3	11.8	10.2	1.3	1.2
Honeywell International Inc.	178.63	78.3%	120,342	132,414	34,459	8,375	32.1%	0.4%	24.3%	1.4	15.8	14.8	3.8	3.7
OMRON Corporation	48.87	57.8%	9,737	9,150	5,586	730	44.8%	4.1%	13.1%	NM	13.2	11.4	1.7	1.6
Rockwell Automation, Inc.	242.16	68.2%	27,954	32,192	7,442	1,370	39.4%	2.2%	18.4%	2.9	23.5	18.7	4.3	4.0
Schneider Electric S.E.	118.62	66.3%	65,847	78,843	32,624	6,073	40.6%	13.3%	18.6%	1.6	13.6	11.9	2.5	2.4
Siemens Aktiengesellschaft	101.10	63.9%	79,827	126,814	71,267	10,208	35.9%	22.4%	14.3%	4.2	13.0	10.3	1.9	1.8
Median		68.2%	\$27,954	\$32,192	\$7,442	\$1,377	40.9%	6.9%	20.8%	2.0x	15.8x	14.8x	3.8x	3.7x
Aggregate Median		73.2%	\$17,382	\$18,748	\$4,022	\$785	40.6%	14.2%	20.8%	1.7x	15.7x	13.8x	2.9x	2.8x

LTM = Latest Twelve Months
 Enterprise Value = (Market Capitalization) + (Debt + Preferred Stock + Non-Controlling Interest) - (Cash & Equivalents)
 EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization
 Source: Capital IQ, SEC filings

Note: Revenue and EBITDA multiples greater than 10.0x and 35.0x, respectively, shown as "NM"

Investor Focus on Margin Sustainability: Q2 Commentary on Pricing vs. Cost Expectations

Positive 2022E Price/Cost



Achieved 100bp spread in price increase (6%) v. inflation (5%). “Expect positive spread in next year” with inflation continuing



Expect price/cost to be positive but dilutive to margins



Expect price/cost to be positive drivers of margin and earnings accretion



Price/cost has compressed return on sales. Expect price to offset costs in 2H. Have seen sticky price increases, “distributors like price, it gives them an opportunity to revalue inventories”. 70% of business goes through distribution



Expect to achieve 1-2% price cost realization in 2H22



Price less net material inflation significantly improved in the quarter. Price realization and cost containment more than offset wages and freight. Strong price realization expected to continue in Automation and C&RS



500bp of price realization which more than offset cost inflation. Expect positive price/cost in 2H22



Expect 8% of price increase which it expects to slightly offset costs for 2022. Focused on pricing backlog, which is facing increasing challenges



Price/cost spread expanded and was accretive to margins -- but still below historical levels



Price/cost inflected positive for first time in 2022 (fiscal 3Q). Quarterly sales up 8% with price contributing ~8%. Expect 4Q organic sales growth 8-9% with price contributing 7%



Positive price/cost in Q2, expect this to continue in 2H



Price/cost a margin tailwind in Q2, expect this to continue in 2H



Pricing up 10%. Positive price/cost but dilutive to margins



Expects to be price/cost positive for remainder of 2022

Investor Focus on Margin Sustainability: Q2 Commentary on Pricing vs. Cost Expectations

Neutral 2022E Price/Cost



Pricing actions continued to match higher costs, yielding a neutral impact. Expected to continue for remainder of year



Expect price/cost (logistics, materials) to be neutral for the near



Unscheduled price increases due to material negative purchase price variances



Targeting neutral price cost in 2022

Warehouse Automation Sector

Strong Automation Fundamentals – Despite Complexity of Moment

The complexity of the moment is being driven by debate over sustainability of corporate earnings growth, economic expectations in the U.S. and abroad, expectations for inflation, geopolitical risk, etc. Corporations are adapting by investing in automation of traditionally labor-intensive processes and solidifying supply chains. This investment bodes well for long-term productivity and economic growth for those corporates capitalizing on the benefits of automation.

Automation: Compelling Value Proposition Across Industries

Businesses save from 15% to 60% on worker costs, making it one of the most cost-effective investments a business can make. Automation and robotics was first seen in the automotive industry, new industries such as medical, life sciences, food, consumer goods, and electronics are increasingly utilizing automation systems.

Supply Chain A Focus Post-Pandemic

Advances in automation technology are reshaping supply chains. Supply chain tracking, inventory management, warehouse management are among the most automated processes today.

Market Overview

The Warehouse Automation market is estimated at ~\$20bn and projected to grow to ~\$40bn by 2030. Representing an 8% CAGR.

“...We are being asked to deliver solutions that require less human intervention...to ultimately help customers reengineer their supply chain.” – John Waldron, Chief Commercial Officer, Honeywell Intelligated

Automation Tipping Point for Omnichannel Warehouses

Leading retailers are aiming to make warehouses responsive, resilient, and reliable to accommodate the growing e-commerce market

Warehouse Automation Benefits

- Cost effective (three-to-five-year payback versus 25-year life)
- Improved productivity
- Less space utilization
- Improved inventory accuracy
- Safety
- Less product damage
- Fewer fulfillment errors
- Environmental (e.g., less land, plastic and energy use)

Warehouse Automation Sector (Cont'd)

Warehouse Market Growth Continues

Total U.S. Warehouse Construction Put in Place (WCPIP) grew an average of 18% YoY during the pandemic (March 2020 - June 2022).

Jun 2022 WCPIP 86% above Jun 2017 level.

Warehouse Construction Put In Place (\$ In Millions)



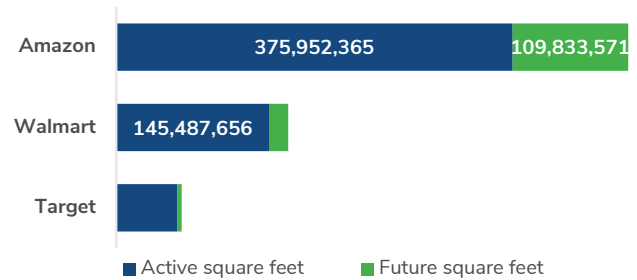
Investments Key to Keeping Pace with Demand

Large U.S. retailers have made significant investments in their warehouse and fulfillment footprints to keep pace with eCommerce demand.

Operating their own fulfillment centers, sortation centers and delivery stations provides greater control over their supply chains.

Amazon's Distribution Footprint Far Ahead of Retail Giants

Square footage of active and future U.S. distribution infrastructure



Amazon's Q2 Warehouse Commentary

In April, Amazon stated it had excess capacity in its warehouse network and would be reducing its warehouse capital investments. Amazon accounts for over 50% of the U.S. eCommerce business, raising concerns of the broader implications for warehouse automation suppliers.

Amazon's capacity reductions do not appear indicative of the broader spending plans of other companies. The company intends to sublet just 5% of what it added during the pandemic.

Moreover, in Q2 2022 U.S. warehouse vacancy rates fell to a record low of ~3% while U.S. warehouse utilization grew in the quarter to ~86%, indicating no excess space within facilities.

Warehouse Automation Sector (Cont'd)

Higher Retail Inventories in Q2 2022

News of elevated inventories and full warehouses were a prominent theme in Q2 earnings results. Retailers grew inventory in reaction to continued eCommerce growth and supply chain constraints.

Prologis estimates in the wake of the pandemic, logistics users need 800 million square feet or more to accommodate inventory growth.

High Stakes: Inventory Turnover (Q2 2021 vs. Q2 2022)

Company	Q2 2021	Q2 2022	% Change
Amazon	10.7x	7.3x	(32)%
Walmart	8.9	7.6	(15)%
Home Depot	5.8	4.6	(21)%
Target	6.3	5.3	(16)%
Lowe's	4.1	3.7	(10)%

Warehouse Automation Market Opportunity

Low Automation Penetration Today

According to research from Markets and Research and Grey Orange, approximately 80% of the nearly 20,000 warehouses in the United States do not use any type of automation and handle products at the pallet level, not at the individual or case level.

Research and Markets found that of the remaining 20%, 15% utilize some level of mechanization with the remaining 5% using sophisticated automation.

Warehouse Automation Increasingly Cost Competitive v. Existing Warehouse Cost Structure

The largest competitor to warehouse automation technologies has been the warehouse professionals, whose costs are increasing as costs of automation are decreasing.

The Bureau of Labor Statistics estimates a total warehousing and storage workforce of ~3.4 million with average compensation of \$35,000 (\$18/hour), expected to grow by 6-7% over the next decade.

Implied current cost of the warehouse and storage workforce of ~\$120 billion – v. current warehouse automation market of ~\$20 billion.

Warehouse Automation Sector (Cont'd)

Warehouse Automation Investment Opportunities

There are a variety of investment opportunities for private equity and strategic buyers seeking to capitalize on broader market trends.

Strategic Activity

Larger players in warehouse automation have sought to create distinctive and integrated capabilities through acquisition.

Acquirers are seeking to develop more end-to-end solution sets rather than point technologies as they seek to unlock value through integrated solutions.

The market has some concentration among the top players - however, it remains fragmented outside of the top 10 in each region.

There is significant fragmentation among integrators, based on industries and geographies served.

Private Investment – Also Key to Funding Growth Opportunities

The evolution of warehouse automation technology also been shaped by private equity and venture-capital funding for early-stage companies.

SoftBank is an example of one such investor which has made recent investments in robotics. Among its investments is a \$2.8 billion cash infusion into AutoStore, a Norwegian provider of cube storage automation, which enables robots to maximize storage space in warehouses.

Also in 2021, a SoftBank-backed SPAC announced it would merge with Walmart-backed Symbotic. The transaction, which closed in June 2022, provided the company \$450 million of gross proceeds, infusing Symbotic with adequate capital to meet its significant commitments to its core customers, including Walmart (which became majority owner in Q2 2022).

Warehouse Automation Sector (Cont'd)

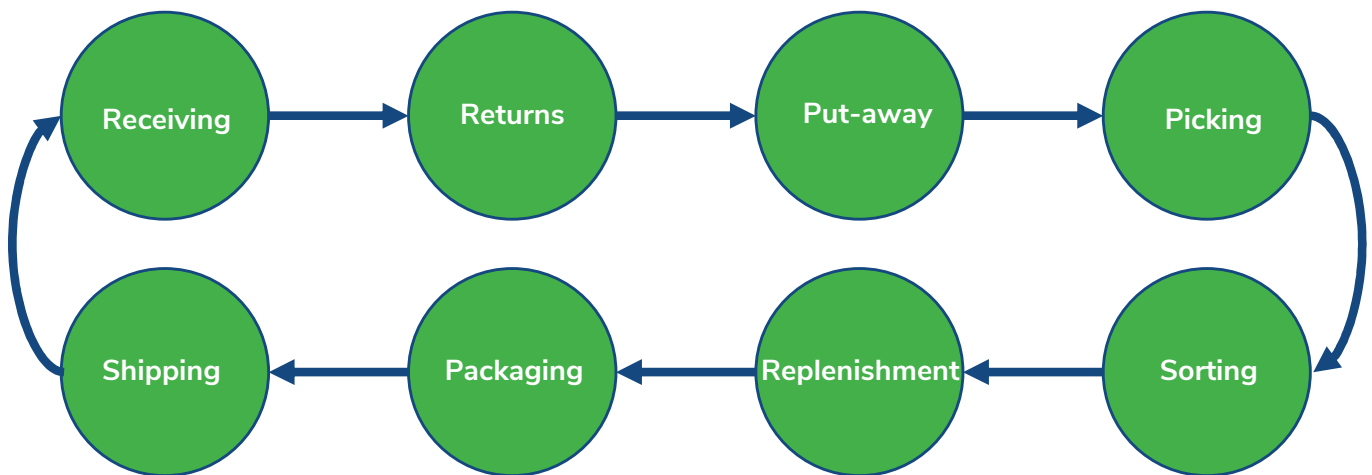
Warehouse Automation Software and Controls Solutions

Automation software and controls coordinate functionality of automated equipment within the warehouse and feed data into enterprise resource planning (ERP) software.

Warehouse Management System (WMS): Records the arrival and departure of inventory and its precise location within the warehouse, optimizing the use of space.

Warehouse Control System (WCS): Manages picking and sorting provided by Material Handling equipment (MHE) retrieval systems, conveyor systems, sorters, palletizers, etc.

Warehouse Execution System (WES): Combines the functionality of WMS and WCS into a single system with the aim of better coordination across a facility's MHE.



Integrators

Integrators of automation systems lie at the intersection of software and material handling equipment and design customized end-to-end systems to meet the needs of warehouse operators.

They typically have experience integrating a variety of MHE and software offerings – a subset of integrators offer their own software solutions. The integrator market is fragmented, presenting investment opportunities for consolidators.

Warehouse Automation Sector (Cont'd)



Material Handling Equipment

Automated Storage and Retrieval Systems (ASRS): Operate on goods-to-person principle. Typically, represents majority of robotics spend

Put and Pick to Light Systems: Organize specific incoming and outgoing customer orders

Conveyor Systems: Automatically transport loads and materials

Sortation Systems: Identify items on a conveyor and divert them to specific destinations

Transportation Systems: Includes automated guided vehicles (AGVs) and automated mobile robots (AMRs)

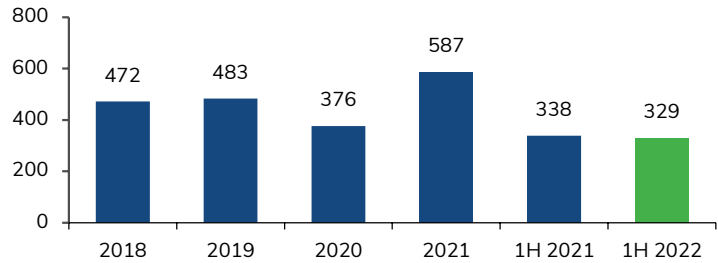
Palletizing Systems: Load products onto pallets

Storage Systems and Support Structures: Include multi-level shelving, steel mezzanines and catwalks required to access shelving. OEMs with value-add capabilities to design and build are advantaged

Industrial Technology M&A Activity

Industrial technology M&A volume in the first half of 2022 was stable, despite macro- and market-uncertainty, though slightly below 2021 levels. A more challenging deal environment required sellers and advisors execute deals with greater nuance to ensure buyer focus and engagement.

Industrial Technology M&A Deal Volume



Note: Represents deals involving a U.S. Industrial Technology targets.
Source: Capital IQ and Mergermarket

Select Automation & Electrical M&A Activity—1H 2022

Announced Date	Target Company	Target Description	Acquirer Name
6/24	Breyden Products	Manufactures braided lacing tapes, twines, cords and sleeving for electrical components used in the aerospace and electric motor industries	Precision Products Group (Auxo Investment Partners)
6/21	Symbotic	Investment in publicly listed Symbotic, an OEM of retail-focused robotics solutions. Walmart currently accounts for 90% of Symbotic's backlog	Walmart; SoftBank
6/17	Optodot	Develops nano-composite battery separators and infrared optical coating technologies used in electric vehicle lithium battery applications	Meta Materials
6/16	Collins Aerospace's ARINC Rail Solutions	Provider of intelligence-based rail dispatch and back-office solutions	Wabtec Corporation
6/14	Eberle Design	A leader in intersection safety products. Will become part of Vance Street's Intelligent Transportation Systems platform comprising Polara Enterprises and Carmanah Technologies	Polarah/Carmanah (Vance Street)
6/10	NPI Solutions	An OEM of cable assemblies and value-add interconnect assemblies for industrial applications with a particular focus on semiconductor manufacturing equipment	Amphenol Corporation
6/9	Bachelor Controls	Provides control and systems integration solutions for the food and beverage, pet food, and specialty pharmaceutical industries	MKD Electric (Hastings Equity Partners)
6/6	Parata Systems (Frazier Healthcare Partners)	Provides pharmacy automation solutions, including vial filling, adherence packaging, inventory management, and return-to-stock solutions	Becton Dickinson and Company
6/3	PVP Advanced EO Systems	Develops and integrates electro-optical and infrared sensor systems for military, aerospace, and commercial applications	Rafael Advanced Defense Systems
6/2	Halco Lighting Technologies	OEM of specialty lighting business includes a portfolio of lighting solutions serving the residential and commercial pool, spa, fountain, and landscape lighting market segments	Hayward Holdings
5/19	Kitchen Brains	Designs and manufactures smart cooking computers, electronic controls and software solutions for commercial foodservice operations	Source Capital

Industrial Technology M&A Activity

Select Automation & Electrical M&A Activity—1H 2022 (Cont'd)

Announced Date	Target Company	Target Description	Acquirer Name
5/17	Advanced Industrial Devices (Rock Island Capital)	Supplies automation and control solutions for oil and gas, water and irrigation and other industrial applications	Black Bay Energy Capital
5/10	VekteK	Manufactures work holding devices, pallet fixture accessories, power supplies and automation equipment	CNL Strategic Capital, Levine Leichtman
4/26	Dynapower	Manufactures energy storage systems, inverters, DC converters, rectifiers, custom transformers and power conversion products	Sensata Technologies
4/26	Spiroflow Systems	Manufacturer of tubular drag conveyor systems for the food and beverage, pharmaceutical and chemical industries	May River Capital
4/20	Schumacher Electric (Lincolnshire Management)	Manufactures power supply products including batteries, battery testers, power generators, electric vehicle chargers and jump starters	Ripple Industries
4/19	Meritec	OEM of high-performance interconnect embedded systems and connectors. Meritec is a new interconnect platform for Arcline	Arcline Investment Management
4/18	Fortna (Thomas H. Lee Partners)	Combination of MHS, a leading global provider of material handling automation technology and systems integration, and Fortna, a leading software and solutions provider for warehouse and distribution, creates a multi-national company providing parcel, warehouse and distribution and lifecycle services	Material Handling Systems (Thomas H. Lee Partners)
4/12	LJR Electronics	Distributes industrial electrical connectors, contacts, tooling and related accessories	Diploma Plc
4/8	C&K Components (Sun Capital Partners)	OEM of high-performance electromechanical switches and interconnect solutions with a strong global presence across a broad range of end markets, including industrial, transportation, aerospace and datacom	Littelfuse
4/4	SL Power (Steel Partners Holdings)	Designs and manufactures AC/DC power conversion solutions used by OEMs within the medical, LED, and industrial end markets	Advanced Energy Industries
3/28	RE2	Developer of autonomous and teleoperated mobile robotic systems for use in the aviation, construction, defense, energy and medical industries	Sarcos Technology and Robotics
3/23	EverCharge	Manufactures and operates proprietary electric vehicle charging stations across the U.S. and Canada	SK E&S
3/25	SDI Industries	Provider of automation and sortation systems	Element Logic AS (Castik Capital Partners)

Industrial Technology M&A Activity

Select Automation & Electrical M&A Activity—1H 2022 (Cont'd)

Announced Date	Target Company	Target Description	Acquirer Name
3/9	uAvionix Corporation	Manufactures aircraft systems-related products, including transponders, transceivers, autopilot technology and panel displays	DC Capital Partners
3/1	Gaven Industries	OEM of radio frequency and magnetic shielding products for defense, industrial, and medical clients	3 Rivers Capital
3/1	RōBEX; Mid-State Engineering	Two industrial automation integrators. RōBEX will serve as the platform investment with Mid-State as the first bolt-on acquisition	Angeles Equity Partners
3/1	Classic Design	Provides automation design and systems integration for the automotive and defense sectors	Crestview Partners
2/23	AllCell Technologies	Produces advanced compact and lightweight lithium-ion batteries	Beam Global
2/16	Rawson / Industrial Controls	Distributes building and industrial automation equipment	Relevant Industrial
2/8	Renaissance Electronics & Communications	OEM of passive and active radio frequency and millimeter-wave frequency components, sub-systems, and higher-order assemblies, primarily serving the defense and commercial markets	AEM (Industrial Growth Partners)
2/1	East West Manufacturing	OEM of automation, robotics and medical components	MSD Partners
1/27	Eckhart (LFM Capital)	Automation solutions provider for manufacturers serving eCommerce, engineered products, electric vehicles, transportation, and consumer products end markets	Arsenal Capital Partners
1/27	In-Charge Energy	Provides EV charging infrastructure, service and software solutions to commercial fleets	ABB
1/25	Honeybee Robotics	OEM of robotic systems, drills and other sample collection systems for use on space missions	Blue Origin
1/10	Fortress Power	OEM of battery energy storage systems that capture and store solar and grid power for homeowners and businesses	White Deer Energy
1/3	Nook Industries	OEM of linear motion solutions for the aerospace, defense, medical, manufacturing, automation, packaging, transportation and food industries	Altra Industrial Motion

Industrial Technology M&A Activity

Select Test & Measurement M&A Activity—1H 2022

Announced Date	Target Company	Target Description	Acquirer Name
6/10	Roper Industrial Businesses	The transaction includes the following businesses: Alpha, AMOT, CCC, Cornell, Dynisco, FTI, Hansen, Hardy, Logitech, Metrix, PAC, Roper Pump, Struers, Technolog, Uson and Viatran. Collectively, these businesses generated approximately \$940 million of revenue and \$260 million of EBITDA in 2021.	CD&R
6/1	Bend Labs	Develops flexible sensors used to measure angular displacement in one or two axes of bending for use in automation in the automotive field and remote monitoring in the digital healthcare fields	Nitto Denko Corporation
5/10	Dytran Instruments	Designs and manufactures sensors, accelerometers, and associated electronics for measuring dynamic force, pressure, and vibration for use in the space, aerospace, industrial and automotive industries in both testing and monitoring solutions	Spectris Plc
4/20	Trimble's Beena Vision Systems	Develops vision-based automatic wayside detectors used to provide contactless assessments of train components	Wabtec Corporation
4/19	OMEGA Engineering	Manufactures and distributes equipment for measuring, monitoring, and modifying temperature, humidity, pressure, strain, force, flow, pH, and conductivity. OMEGA will become part of Dwyer Group, a global leader in the design and manufacture of innovative sensors and instrumentation solutions for the Indoor Environmental Quality, building automation, process and environmental markets	Dwyer Group (Arcline Investment Management)
3/28	Novinium	Provides full-service cable rejuvenation solutions for electric utility companies	Southwire Company
3/14	Max Analytical Technologies	Develops infrared spectroscopy gas analysis technology for in-process monitoring, source testing, and ambient air monitoring	Thermo Fisher Scientific
3/9	Power Test	OEM of dynamometers and heavy equipment testing systems used by manufacturers, rebuilding facilities, and distributors in the mining, oil and gas, trucking, construction and military markets	StoneTree Investment Partners
3/7	Qi2 Elements	Provides inspection services, pipeline engineering assessments, and water tank engineering services	Baker Hughes Incorporated
2/21	International Light Technologies	Offers light measurement systems for anti-microbial disinfection, laser safety testing, fiber optic testing, photometry and plant photobiology	Halma
2/2	CEM Solutions	Designs, manufactures, and services continuous emissions monitoring systems for gas, particulate, and dust emissions	Alliance Technical Group
1/20	Headwall Photonics	Manufactures and designs hyperspectral sensors used in remote vehicular sensing, industrial inspection, medical identification, and government intelligence	Arsenal Capital Partners
1/13	Intelligent RF Solutions	Designs and manufactures RF and microwave systems for signals intelligence, electronic intelligence, and electronic warfare functions used in military and intelligence community applications	MITEQ
1/3	Tangent Labs	Provides accredited onsite and lab-traceable certifications as well as calibration services for precision measurement devices	Transmotion
1/3	Intevac Photonics	Develops advanced high-sensitivity digital sensors, cameras, and systems used in integrated imaging systems for the defense industry	EOTech

Industrial Technology M&A Activity

Select Flow Control M&A Activity—1H 2022

Announced Date	Target Company	Target Description	Acquirer Name
6/15	UGSI Solutions	Develops water quality management technologies and chemical feed solutions for use in water and wastewater disinfection applications for municipal, oil and gas, and energy utilities, and other industrial clients	Baird Capital Partners
6/9	Spencer Aerospace Manufacturing	OEM of high-precision hydraulic fluid fittings for commercial and aerospace applications	Senior Plc
6/2	Hydrofresh (Keller Logistics Group)	Provides high pressure processing and cold storage solutions for refrigerated food manufacturers	Universal Pure (Tilia Holdings)
5/9	Dynamic Controls; Cunico	OEMs of highly engineered valves, manifolds, and fittings for naval vessels using liquified natural gas	BWX Technologies
5/2	ePUMPS	OEM of pumps, mechanical seals, vacuum systems, compressors, and related value-added services in Oklahoma and Texas	Ohio Transmission Corporation (Genstar)
4/12	OnSite PRO	Manufactures FloodStop products, a line of point-of-use leak detection devices for residential and light commercial use cases	IPS Corporation (Centerbridge)
4/5	Flow Control Holdings (Edgewater Funds)	Distributes sanitary and high purity flow components, including pumps, valves, and hoses, for applications in the food, beverage and pharmaceutical industries	Audax Group
4/4	BL Technology	Provides low-voltage integration solutions for instrumentation and control, safety, and SCADA security systems for municipal, commercial and institutional clients	Inframark
3/24	Advanced Industrial Technologies; El Mar Ventures	Distributor of engineered valves made with stainless steel, nickel alloys and other premium materials to withstand harsh critical environments – sold under the Ladish, Smith, AIT and Diamond Gear Brands	LPW Group (Wynnchurch Capital)
3/15	Aqua-Chem	Provides large-scale industrial water treatment solutions, including carbon filtration, reverse osmosis, and vapor compression	SAUR
3/2	VanZandt Controls	Provides automated valves, flow measurement components, and other instruments for the oil and gas industry	Scada Products
2/1	Wilnat	Operates as KGM, a measurement product distributor that supplies valves, meters, electronics, and other equipment for the natural gas measurement industry	Compass Group Equity Partners
1/26	Dreno Pompe	Designs and manufactures submersible pumps and mixers for wastewater treatment applications	Industrial Flow Solutions (May River Capital)
1/24	Exterran Corporation	Offers natural gas and treating solutions, gas compression equipment, water treatment systems, and onsite power generation equipment used in midstream infrastructure	Enerflex
1/5	Standard Pump	Manufactures sanitary and industrial process pumps and other fluid handling equipment	Unibloc-Pump (May River Capital)

Industrial Technology M&A Activity

Select Industrial Software M&A Activity—1H 2022

Announced Date	Target Company	Target Description	Acquirer Name
6/30	Fluxa	Develops process and knowledge management technology for the drug development lifecycle	Emerson Electric Co.
6/29	Stratus Technologies (Siris Capital)	Provides data collection and analysis software and hardware to data centers and edge business processes	SMART Global Holdings
6/1	Turvo	Offers a cloud-based transportation management system platforms targeted at freight brokers, third party logistics, and shippers	Bay Grove Capital, Lineage Logistics Holdings
5/17	Seven Lakes Technologies	Develops solutions for the oil & gas exploration and production sector, including field data gathering, rig scheduling, well lifecycle management, and production allocation software	W Energy Software
5/11	AutoGrid Systems	Develops energy management software for energy services providers, utility storage, electric vehicle fleet management, and roof-top solar, utility scale wind and other distributed energy resources	Schneider Electric SE
4/26	Artel	Provides performance management software systems that control automated liquid handling systems	Advanced Instruments (Investor AB)
4/22	Vicarious	A software provider and integrator of software with industrial robots which sells its robots under a Robots as a Service model	Intrinsic Innovation (Alphabet)
4/12	Ananki	Provides private 5G software for enterprises	Intel Corporation
4/7	CDK Global	Provides integrated computing solutions to auto, truck, motorcycle, marine, recreational vehicle, and heavy equipment dealers	Brookfield Business Partners
4/5	Pen-Link	Provides communications surveillance data collection and analysis solutions for law enforcement.	Spire Capital Partners

Industrial Technology M&A Activity

Select Industrial Software M&A Activity—1H 2022 (Cont'd)

Announced Date	Target Company	Target Description	Acquirer Name
2/28	Syft	Provides AI-enhanced inventory control and end-to-end supply chain management software and services used in the hospital, warehouse, and distribution industries	Global Healthcare Exchange (Temasek)
2/28	StreamSets	Provides data integration software for the automation data stack	Software AG
2/8	Driivz	Offers a cloud-based electric vehicle charging operating system – including an operator portal, driver portal, on the go application, billing, analysis tool and grid management	Vontier Corporation
2/2	Mintec	Leading independent provider of global commodity price data, price forecasts, and market intelligence for the food, consumer packaged goods, and capital goods supply chains	Five Arrows Principal Investments
1/31	Surgere	Develops automated supply chain tracking software for the automotive, aerospace, retail, agricultural, and manufacturing industries	Graham Partners
1/25	GAINSystems	Offers supply chain planning software that uses machine learning to optimize inventory and forecast demand. The product is targeted at distributors, manufacturers, retailers, and MRO businesses	Francisco Partners
1/19	SOLUTE	Develops military and defense intelligence systems, including training readiness information systems, unmanned carrier aviation projects, and navy combat management systems	Sigma Defense Systems (Sagewind Capital)
1/13	Cloud Inventory	Develops inventory management software used to streamline supply chain operations, gain end-to-end visibility on inventory, and manage manufacturing operations	Nextworld
1/12	FogHorn Systems	Develops edge AI software applications for advanced monitoring and diagnostics, machine performance optimization and proactive maintenance for OEMs and system integrators serving a variety of industrial end markets	Johnson Controls International
1/5	Dodge Construction Network	Provides data, analytics, news, and intelligence solutions to the construction industry	Clearlake Capital Group

Select Kroll Industrial Technology Experience

Sell-Side M&A Advisor



KORROID-INDUSTRIAL ELECTRICAL SALES, LLC

a portfolio company of



has been acquired by



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Distinguished Enterprise Software Franchise

- Our Technology M&A Practice (formerly Pagemill Partners) has completed over 300 transactions, the majority of which are in enterprise software
 - Industry leaders leveraging both SaaS and perpetual models, including companies with hybrid delivery models
 - Underlying technology architecture, reliance on third-party technologies and strategic partnerships, product roadmaps and vertical go-to-market strategies are all important attributes that we have demonstrated experience in articulating and positioning



Key Sub-Sectors of Focus for our Technology M&A Practice (Formerly Pagemill Partners)

Vertical Software/SaaS

AIA Contract Documents

a business division of



has been acquired by



has been acquired by



has been acquired by



has been acquired by



Networking / IOT

TALARI Networks

has been acquired by



has been acquired by



has been acquired by



has been acquired by



Data & Analytics



AT INTERNET

has been acquired by



has been acquired by



has been acquired by



has been acquired by



Security



has been acquired by



has been acquired by



has been acquired by



has been acquired by





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