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Spotlight

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# Industrial Technology

## Industry News

### **The Manufacturing Sector: History and Future**

Industry Week [Full Article](#)

The manufacturing industry has had significant changes over the past few decades. From the 1990s to 2010s, three significant trends in the manufacturing sector include: outsourcing to bring a competitive advantage, vertical integration of supply chains and leveraging original design manufacturers.

Recent developments have shifted the manufacturing landscape: major manufacturing hubs have grown their own companies to compete with multinational brands, and the COVID-19 pandemic has caused global disruptions in the supply chain. Looking ahead, global manufacturers should focus on three key points: serving local buying habits, developing nimble supply chains, and using data for continuous improvement.

### **Intel Invests \$20B to Combat Chip Drought**

Industry Week [Full Article](#)

Tech giant Intel announced that it would invest \$20B into a new microchip production facility in Ohio. The chip shortage arguably caused by COVID made it clear that the global silicon supply chain is heavily dependent on overseas transport from Korea and Taiwan, the world's largest microchip producers.

Other industries that depend on chips, such as automobile and consumer electronics and robotics, also suffer during the ongoing shortage. The severity has prompted government action, and several companies besides Intel have announced new chip production facility investments, including GlobalFoundries Inc., Ford and Texas Instruments.

### **IBM and Samsung Announce New Energy-Saving Semiconductor Innovation**

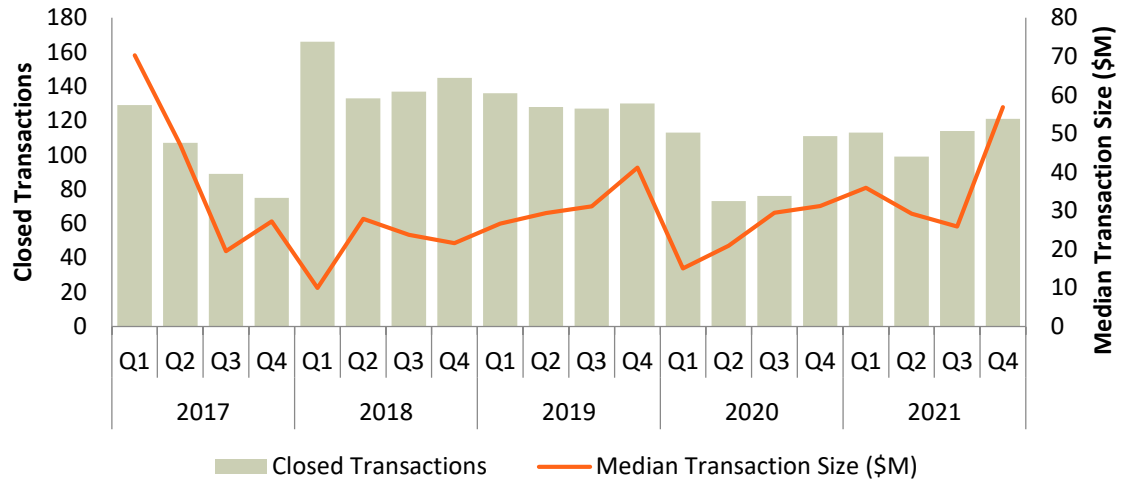
Manufacturing Global [Full Article](#)

On December 16, 2021, IBM and Samsung have jointly announced a development in semiconductor design which will decrease energy usage by 85%. The innovation uses a new vertical transistor architecture that demonstrates a path to scaling beyond nanosheet, and will minimize energy usage compared to a scaled fin field-effect transistor. The breakthrough can deliver significant improvements including:

- Semiconductor device scaling beyond nanosheet;
- Cell phone batteries that can last for over a week;
- Decrease in carbon footprint for cryptomining and data encryption;
- Continued expansion of Internet of Things with lower energy needs.

# Industrial Technology

## Industrial Technology M&A Environment



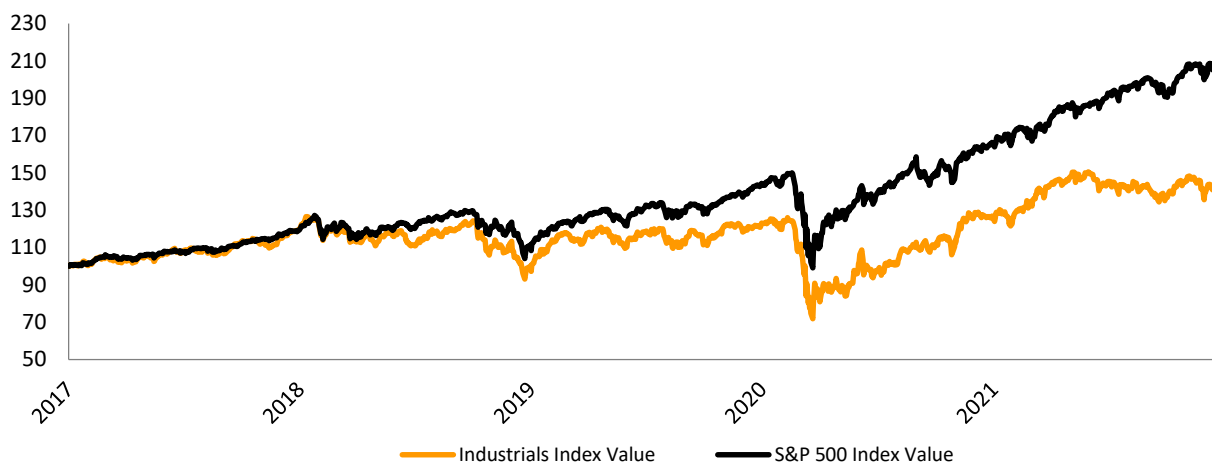
\*For the purposes of compiling data, we define constituents in the Industrial Technology sector as companies that make production faster and more efficient through the use of engineering. The data contains global deals of all sizes. Transaction values of less than \$1 million have been excluded from the median calculation.

## Selected Q4 2021 Industrial Technology Transactions

Date Closed	Target	Buyers/Investors	Sector	Enterprise Value (\$M)	EV / LTM	
					Revenue	EBITDA
12/31/2021	Nook Industries, Inc.	Thomson Industries, Inc.	Machinery	135.25	-	-
12/29/2021	Engineered Controls International, LLC	OPW Fueling Components Inc	Machinery	631.00	-	-
12/27/2021	The Carlyle Johnson Machine Company, L.L.C.	Ringfeder Power Transmission USA Corporation	Electrical Components and Equipment	16.50	1.6x	-
12/15/2021	Cincinnati Fan and Ventilator Company, Inc.	SPX Corporation (NYSE:SPXC)	Machinery	142.70	-	-
12/14/2021	Earthly Labs Inc.	Chart Industries, Inc. (NYSE:GTLS)	Industrial Filtration Systems	72.94	-	-
12/13/2021	Excell Battery Company	Ultralife Corporation (NasdaqGM:ULBI)	Electrical Components and Equipment	23.50	1.1x	-
12/1/2021	Anord Mardix Inc.	Flex Ltd. (NasdaqGS:FLEX)	Power Generation Equipment	539.00	-	-
12/1/2021	Garvey Corporation	Columbus McKinnon Corporation (NasdaqGS:CMCO)	Conveyors and Conveying Equipment	74.00	2.5x	8.2x
12/1/2021	Ferrie Franzmann Industries, LLC	Riot Blockchain, Inc. (NasdaqCM:RIOT)	Electrical Components and Equipment	51.73	-	-
11/30/2021	Carling Technologies, Inc.	Littelfuse, Inc. (NasdaqGS:LFUS)	Electrical Components and Equipment	315.00	-	-
11/23/2021	Arrowhead Systems, LLC.	Regal Rexnord Corporation (NYSE:RRX)	Conveyors and Conveying Equipment	297.00	-	-
11/19/2021	Spear Power Systems, LLC	Sensata Technologies Holding plc (NYSE:ST)	Electrical Components and Equipment	130.00	-	-
11/12/2021	The ExOne Company	Desktop Metal, Inc. (NYSE:DM)	Machinery	483.74	7.3x	-
11/4/2021	Networks Electronic Company LLC	ESCO Technologies Inc. (NYSE:ESE)	Machinery	15.20	-	-
10/18/2021	Pleatco LLC	Pentair plc (NYSE:PNR)	Industrial Filtration Systems	255.00	-	-
10/13/2021	Dw Windsor Group Limited	Luceco plc (LSE:LUCE)	Electrical Components and Equipment	23.05	0.7x	7.4x
10/8/2021	Lydall, Inc.	Unifrax I LLC	Industrial Filtration Systems	1,356.86	1.7x	15.3x
10/4/2021	Electrozemper, S.A.	FW Thorpe Plc (AIM:TFW)	Electrical Components and Equipment	46.46	2.0x	-
10/1/2021	SPX Transformer Solutions, Inc.	GE-Prolec Transformers, Inc.	Power Generation Equipment	645.00	-	10.5x

# Industrials

There is optimism and an expectation for growth in the Industrials industry in 2022, following the downturn in 2020 and recovery in 2021. Q4 M&A activity proliferated as transaction volume topped pre-pandemic levels to reach over 2,600 deals. The reopening of the economy and a high purchase price multiple environment have encouraged many business owners to go to market and take advantage of the seller-friendly environment. In 2022, M&A activity is expected to remain strong given key drivers such as supply chain reshoring, growth in ESG and capitalization on consumer behavior changes.



As of 12/31/2021

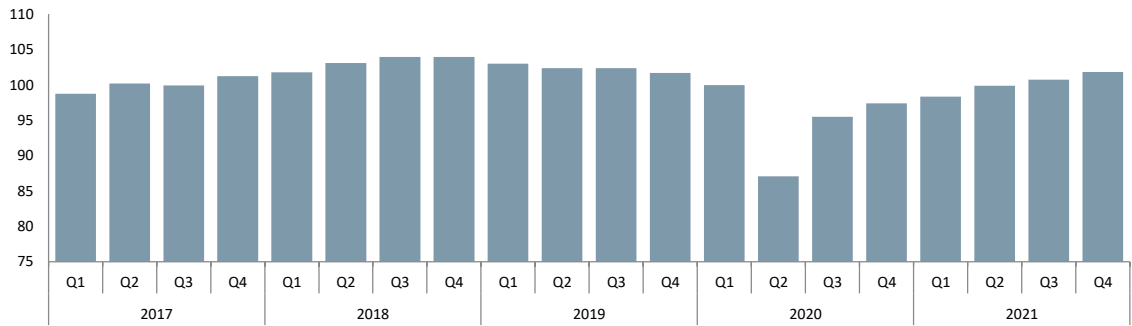
Company Name	CIQ	Ticker	Enterprise Value	LTM Financials				Valuation Metrics			LTM Margins	
				Revenue	Gross Profit	EBITDA	EV / Revenue	EV / Gross Profit	EV / EBITDA	Gross Margin	EBITDA Margin	
Avis Budget Group, Inc. (NasdaqGS:CAR)	CAR	NasdaqGS:CAR	\$27,989	\$9,313	\$4,007	\$2,602	3.0x	7.0x	10.8x	43.0%	27.9%	
Southwest Airlines Co. (NYSE:LUV)	LUV	NYSE:LUV	\$22,171	\$15,790	\$2,172	-\$112	1.4x	10.2x	NM	13.8%	-0.7%	
Quanta Services, Inc. (NYSE:PWR)	PWR	NYSE:PWR	\$17,841	\$12,980	\$1,953	\$1,053	1.4x	9.1x	16.9x	15.0%	8.1%	
Textron Inc. (NYSE:TXT)	TXT	NYSE:TXT	\$19,214	\$12,727	\$2,038	\$1,391	1.5x	9.4x	13.8x	16.0%	10.9%	
United Rentals, Inc. (NYSE:URI)	URI	NYSE:URI	\$34,654	\$9,716	\$3,890	\$2,691	3.6x	8.9x	12.9x	40.0%	27.7%	
Northrop Grumman Corporation (NYSE:NOC)	NOC	NYSE:NOC	\$71,051	\$35,667	\$7,268	\$8,734	2.0x	9.8x	8.1x	20.4%	24.5%	
FedEx Corporation (NYSE:FDX)	FDX	NYSE:FDX	\$98,528	\$89,552	\$24,590	\$11,722	1.1x	4.0x	8.4x	27.5%	13.1%	
Raytheon Technologies Corporation (NYSE:RTX)	RTX	NYSE:RTX	\$155,993	\$64,388	\$12,525	\$11,374	2.4x	12.5x	13.7x	19.5%	17.7%	
American Airlines Group Inc. (NasdaqGS:AAL)	AAL	NasdaqGS:AAL	\$43,748	\$29,882	\$1,934	-\$2,842	1.5x	22.6x	-15.4x	6.5%	-9.5%	
General Electric Company (NYSE:GE)	GE	NYSE:GE	\$150,283	\$74,196	\$18,411	\$5,713	2.0x	8.2x	26.3x	24.8%	7.7%	
L3Harris Technologies, Inc. (NYSE:LHX)	LHX	NYSE:LHX	\$48,685	\$17,814	\$5,376	\$3,637	2.7x	9.1x	13.4x	30.2%	20.4%	
Waste Management, Inc. (NYSE:WM)	WM	NYSE:WM	\$82,750	\$17,931	\$6,820	\$4,956	4.6x	12.1x	16.7x	38.0%	27.6%	
United Parcel Service, Inc. (NYSE:UPS)	UPS	NYSE:UPS	\$201,355	\$97,287	\$26,867	\$19,221	2.1x	7.5x	10.5x	27.6%	19.8%	
CSX Corporation (NasdaqGS:CSX)	CSX	NasdaqGS:CSX	\$98,101	\$12,522	\$6,643	\$6,643	7.8x	14.8x	14.8x	53.1%	53.1%	
Caterpillar Inc. (NYSE:CAT)	CAT	NYSE:CAT	\$140,106	\$50,971	\$13,189	\$10,541	2.7x	10.6x	13.3x	25.9%	20.7%	
Cummins Inc. (NYSE:CM)	CM	NYSE:CM	\$33,505	\$24,021	\$5,695	\$2,969	1.4x	5.9x	11.3x	23.7%	12.4%	
Deere & Company (NYSE:DE)	DE	NYSE:DE	\$146,800	\$43,956	\$12,188	\$9,040	3.3x	12.0x	16.2x	27.7%	20.6%	
Delta Air Lines, Inc. (NYSE:DAL)	DAL	NYSE:DAL	\$47,020	\$29,899	\$2,171	-\$488	1.6x	21.7x	NM	7.3%	-1.6%	
Emerson Electric Co. (NYSE:EMR)	EMR	NYSE:EMR	\$60,227	\$18,548	\$7,662	\$3,976	3.2x	7.9x	15.1x	41.3%	21.4%	
General Dynamics Corporation (NYSE:GD)	GD	NYSE:GD	\$70,282	\$38,469	\$6,408	\$5,271	1.8x	11.0x	13.3x	16.7%	13.7%	
W.W. Grainger, Inc. (NYSE:GWW)	GWW	NYSE:GWW	\$29,034	\$13,022	\$4,720	\$1,754	2.2x	6.2x	16.6x	36.2%	13.5%	
J.B. Hunt Transport Services, Inc. (NasdaqGS:JBHT)	JBHT	NasdaqGS:JBHT	\$22,429	\$12,168	\$2,023	\$1,603	1.8x	11.1x	14.0x	16.6%	13.2%	
Illinois Tool Works Inc. (NYSE:ITW)	ITW	NYSE:ITW	\$83,031	\$14,455	\$5,966	\$3,910	5.7x	13.9x	21.2x	41.3%	27.0%	
Jacobs Engineering Group Inc. (NYSE:J)	J	NYSE:J	\$21,537	\$14,091	\$3,298	\$1,392	1.5x	6.5x	15.5x	23.4%	9.9%	
Lockheed Martin Corporation (NYSE:LMT)	LMT	NYSE:LMT	\$106,964	\$67,044	\$9,097	\$9,010	1.6x	11.8x	11.9x	13.6%	13.4%	
3M Company (NYSE:MMM)	MMM	NYSE:MMM	\$115,703	\$35,355	\$16,579	\$9,705	3.3x	7.0x	11.9x	46.9%	27.5%	
Norfolk Southern Corporation (NYSE:NSC)	NSC	NYSE:NSC	\$85,347	\$11,142	\$5,730	\$5,730	7.7x	14.9x	14.9x	51.4%	51.4%	
PACCAR Inc (NasdaqGS:PCAR)	PCAR	NasdaqGS:PCAR	\$36,903	\$23,522	\$3,162	\$2,675	1.6x	11.7x	13.8x	13.4%	11.4%	
Parker-Hannifin Corporation (NYSE:PH)	PH	NYSE:PH	\$46,946	\$15,293	\$4,281	\$3,290	3.1x	11.0x	14.3x	28.0%	21.5%	
Stanley Black & Decker, Inc. (NYSE:SWK)	SWK	NYSE:SWK	\$36,142	\$17,169	\$6,080	\$3,187	2.1x	5.9x	11.3x	35.4%	18.6%	
United Airlines Holdings, Inc. (NasdaqGS:UAL)	UAL	NasdaqGS:UAL	\$36,047	\$24,634	\$3,265	-\$2,027	1.5x	11.0x	-17.8x	13.3%	-8.2%	
Union Pacific Corporation (NYSE:UNP)	UNP	NYSE:UNP	\$191,683	\$21,804	\$12,747	\$11,571	8.8x	15.0x	16.6x	58.5%	53.1%	
AGCO Corporation (NYSE:AGCO)	AGCO	NYSE:AGCO	\$9,961	\$11,138	\$2,572	\$1,299	0.9x	3.9x	7.7x	23.1%	11.7%	
ManpowerGroup Inc. (NYSE:MAN)	MAN	NYSE:MAN	\$5,118	\$20,724	\$3,408	\$687	0.2x	1.5x	7.4x	16.4%	3.3%	
Canadian National Railway Company (TSX:CNR)	TSX:CNTSX:CNR		\$96,039	\$11,440	\$6,404	\$6,404	8.4x	15.0x	15.0x	56.0%	56.0%	
C.H. Robinson Worldwide, Inc. (NasdaqGS:CHRW)	CHRW	NasdaqGS:CHRW	\$15,771	\$23,102	\$1,608	\$1,147	0.7x	9.8x	13.7x	7.0%	5.0%	
The Boeing Company (NYSE:BA)	BA	NYSE:BA	\$160,914	\$62,286	\$5,190	\$1,457	2.6x	31.0x	NM	8.3%	2.3%	
Republic Services, Inc. (NYSE:RSG)	RSG	NYSE:RSG	\$53,773	\$11,295	\$4,648	\$3,343	4.8x	11.6x	16.1x	41.2%	29.6%	
Fluor Corporation (NYSE:FLR)	FLR	NYSE:FLR	\$2,731	\$12,435	\$412	\$79	0.2x	6.6x	34.4x	3.3%	0.6%	
Bombardier Inc. (TSX:BBDB.B)	BBDB.B	TSX:BBDB.B	\$9,442	\$6,085	\$924	\$336	1.6x	10.2x	28.1x	15.2%	5.5%	
AECOM (NYSE:ACM)	ACM	NYSE:ACM	\$12,935	\$13,294	\$814	\$832	1.0x	15.9x	15.5x	6.1%	6.3%	
Honeywell International Inc. (NasdaqGS:HON)	HON	NasdaqGS:HON	\$153,947	\$34,392	\$10,998	\$8,696	4.5x	14.0x	17.7x	32.0%	25.3%	
XPO Logistics, Inc. (NYSE:XPO)	XPO	NYSE:XPO	\$13,041	\$12,806	\$2,470	\$1,240	1.0x	5.3x	10.5x	19.3%	9.7%	
Univar Solutions Inc. (NYSE:UNVR)	UNVR	NYSE:UNVR	\$7,101	\$9,536	\$2,416	\$872	0.7x	2.9x	8.1x	25.3%	9.1%	
Air Canada (TSX:AC)	TSX:ACTSX:AC		\$12,281	\$5,057	-\$296	-\$1,696	2.4x	-41.6x	-7.2x	-5.8%	-33.5%	
Hertz Global Holdings, Inc. (NasdaqGS:HTZ)	HTZ	NasdaqGS:HTZ	\$20,694	\$7,336	\$2,935	\$2,256	2.8x	7.1x	9.2x	40.0%	30.8%	
Uber Technologies, Inc. (NYSE:UBER)	UBER	NYSE:UBER	\$86,663	\$17,455	\$6,227	-\$3,001	5.0x	13.9x	-28.9x	35.7%	-17.2%	
Howmet Aerospace Inc. (NYSE:HWM)	HWM	NYSE:HWM	\$17,337	\$4,972	\$1,404	\$1,127	3.5x	12.3x	15.4x	28.2%	22.7%	

Median	2.0x	10.2x	13.8x	23.7%	13.4%
Mean	2.7x	9.5x	12.7x	25.4%	16.0%

# Industrials

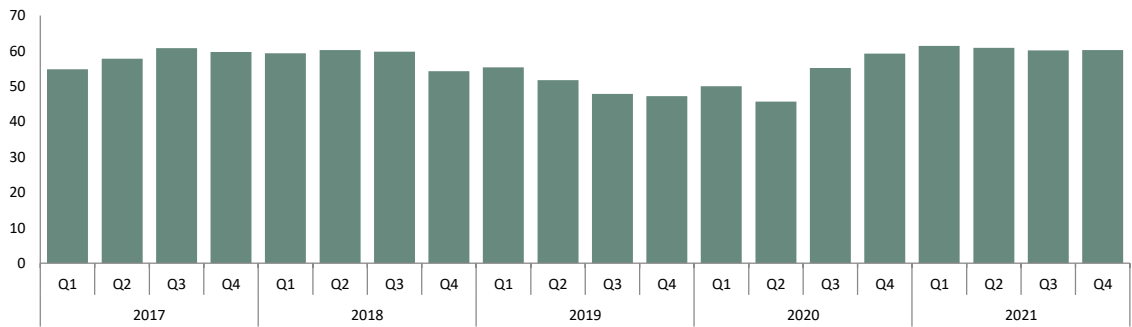
## State of the Industry

### U.S. Industrial Production Index (Seasonally Adjusted)



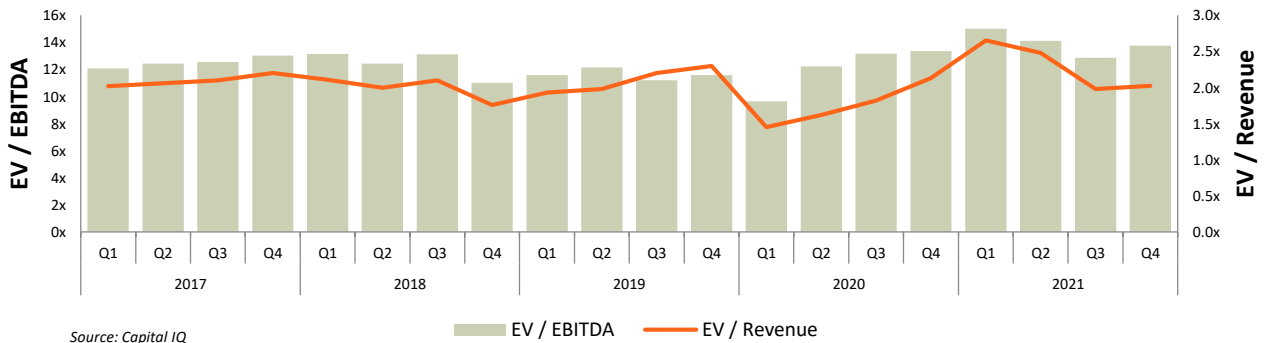
Source: Federal Reserve

### Purchasing Managers Index



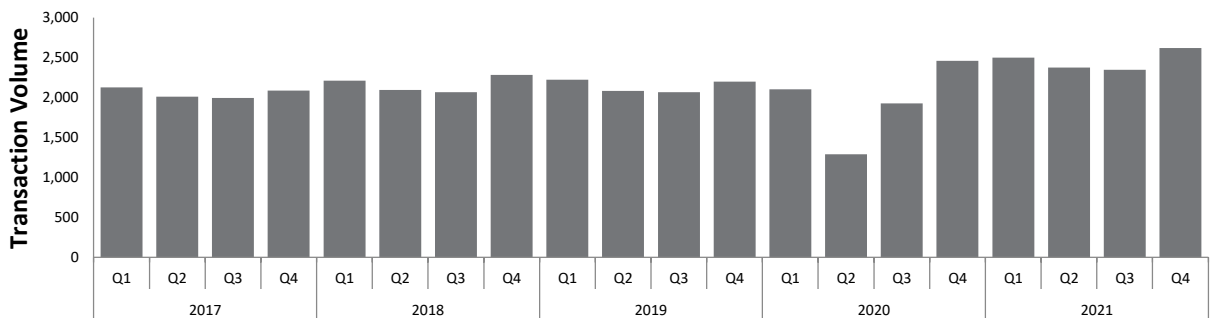
Source: Institution for Supply Management

### Industry Valuations



Source: Capital IQ

### Industrials Transaction Volume



Source: Capital IQ



## The Value of Accomplishment

The highest level of expertise and hard work is what accomplishment requires. It's what you deserve and what we do.

- We sweat the small stuff.
- Take a 3:00 am call.
- Say yes.
- Say no.
- Dig deeper when things get tough.
- And celebrate with you when your efforts pay off and you can reflect on it all and say, "It's really remarkable what we've accomplished here."
- Then and only then, will we know that we've accomplished something meaningful, too.

### About Mirus

Mirus' Industrial team has experience working with owners of growth industrial businesses and distressed industrials, executing corporate carve-outs, strategic sales and leveraged buy-outs. Much of our work is with closely-held companies – niche leaders who have the industry leading solution in a sub \$200 million market. The companies often have strategic value to large corporations serving the broader market - acquirers who can integrate a product line into their portfolio. For larger industrial companies, Mirus has advised buyers and sellers on M&A, including leveraged buy-outs, and has executed corporate divestitures and restructurings.

### Partners Spotlight

Alan, Andrew, and Rudy have decades of experience advising companies in the Industrial space. They have a demonstrated record of managing and closing dozens of engagements with companies in the industry. Alan has been nationally recognized by M&A Advisor as a sector finalist across multiple industries and has an MBA from Ecole des Ponts (France), an MS in Electrical Engineering from Brown University, and a BS in Mechanical Engineering from MIT. Andrew began his career as an attorney at Foley Hoag LLP and has prior experience as a fifth-generation family business owner and CEO. Andrew graduated from Williams College and the University of Michigan Law School. Rudy has over 20 years of experience in investment banking and corporate finance, advising on a broad range of M&A, IPOs, and financing transactions. Rudy earned his MIA from Columbia University and his BSEE from Worcester Polytechnic Institute.



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*"The Mirus team successfully guided us through every aspect of the transaction, from identifying prospective buyers through closing. They conducted a thorough process and we are delighted by the outcome."*



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## Mirus Industrial Spotlight



has been acquired by



AIC is a leading specialty chemical and ingredients distributor based in Framingham, Massachusetts. LeBaronBrown is a private investment firm with a multi-decade orientation and a strategy to bring capital and resources to company management teams to enable growth over a multi-decade period. AIC joins Charkit Chemical Company LLC, acquired in June of 2017, under the same parent company. This transaction positions AIC for long-term, continued growth, building upon the success of its dedicated team.



has been acquired by



MagneMotion is a provider of intelligent transport systems based on patent protected linear synchronous motor (LSM) technology. Rockwell Automation Inc. (NYSE: ROK), the world's largest company dedicated to industrial automation and information, makes its customers more productive and the world more sustainable. The acquisition of MagneMotion expands Rockwell Automation's independent cart technology and complements its acquisitions of iTRAK Technology and Jacobs Automation.



has been recapitalized by



FleetLogix provides outsourced labor to rental car agencies across the U.S.. The company uses a proprietary technology platform to track and analyze performance at each site, to ensure quality and efficiency in its service delivery, and to provide data and metrics to its managers and its clients. Striker Partners is a private, family-based investment firm formed to make majority equity investments in profitable and growing businesses. Striker Partners brings technology expertise to the company and represents a great cultural fit.



has been acquired by



Newcan supplies components to the automotive and trucking industries and is a leader in manufacturing precision metal stampings and perforated components. Falls Stamping & Welding is located in Cuyahoga Falls, Ohio and operates in the metal parts industry. Falls Stamping is recognized for the breadth of manufacturing capabilities. The acquisition of Newcan expands the company's offerings.



SUN SIMULATOR BUSINESS

has been acquired by



Spire Corporation (Nasdaq: SPIR), a leading technology and equipment supplier to the solar photovoltaic (PV) industry located in Bedford, Massachusetts, sold its sun simulator business, a supplier of critical tools for both PV module production lines and testing/certification laboratories, in a cross border transaction to Eternal Sun, a company based in The Hague, the Netherlands that specializes in solar simulation technology for the purpose of product and material testing.