

Industrial Automation & Machinery "IAM"

Accelerated growth across the IAM industry in the post-pandemic world



MAY 2020



The COVID-19 pandemic is the most severe health crisis in modern times, and has led to a shock to the global economy, triggering major turmoil in commodity, financial and M&A markets as well as in many industrial and service related sectors. In our latest Industrial Automation Newsletter, we are examining the effects of the pandemic on the Industrial Automation sector in general, and the Logistics Automation vertical in particular.

Industry Outlook: We expect accelerated growth across the Industrial Automation & Machinery industry in the post-pandemic world

While we are fighting against the pandemic and the exact longer-term effects on our economy are still unclear, there is already a broad consensus that the world will look different in the post-pandemic era.

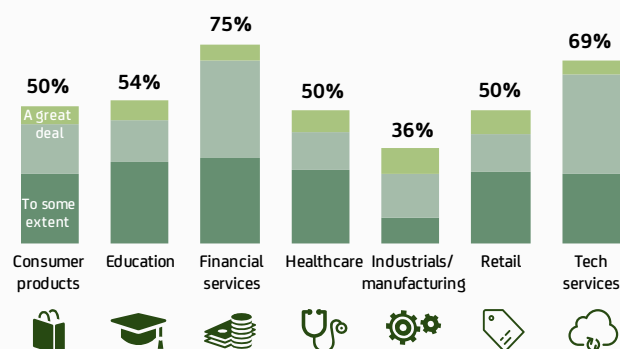
As it relates to our sector focus, we believe the global economy will become significantly more AUTOMATED.

Automation and digitalization across the industrials sector has been a mega trend for the past decade, driving strong growth in the market for automated production-, logistics-, and supply chain systems and its suppliers before the outbreak. While 2020 will be challenging for the broader industrials sector, industrial automation included, we anticipate a sharp rise of automation investments across industries in the mid to long term.

In the near term, new automation investments will be concentrated in demand in sectors like e-commerce (see next page) and healthcare. In contrast, automation demand in the broader industrials and manufacturing sector (such as automotive, durable goods, fashion etc.) is expected to slow down for the next few quarters at least, and in the case of automotive probably until 2021. Ongoing supply chain disruptions and stricter hygiene and distancing requirements as well as constrained staff availability will likely represent hurdles for installing and commissioning new projects in the near term.

In the mid to long term, once businesses have stabilized their operations, they will begin to take measures to adapt to the post-COVID-19 world and as a result starting in 2021, we foresee a significant demand boost (both pent-up and new) across the automation industry, as companies accelerate automation initiatives to address:

Percent companies taking action to accelerate automation initiatives as a result of the COVID-19¹



Accelerated E-Commerce Demand

E-commerce adoption will accelerate as COVID-19 is permanently changing consumer habits towards the retail online channel



Increased Efficiency and Human Labor Reduction Requirements

Increased automation investments to guarantee uptime of critical production, enable remote servicing and predictive maintenance, and increase cost efficiency



Supply Chain Changes

COVID-19 surfaced the vulnerability of global supply chains and will lead to decentralized supply chain models, and trigger nearshoring of production capacities



Intelligent Automation Mega Trend

The convergence of automation equipment with software, data analytics and artificial intelligence has been low thus far; we expect this trend to accelerate

The expected growth in the industry combined with technology step changes will drive M&A activity. Companies that are exposed to the key trends such as e-commerce or intelligent automation will continue to generate high multiples despite an expected challenging M&A environment in general. For IAM investors, it is important to examine the underlying dynamics of the various verticals and addressable end markets in order to capture the full scope of opportunities. On the next page, we are diving into the Logistics Automation vertical in more detail.

1) "Accelerating automation amid a pandemic", Bain & Company, 7 May 2020

Spotlight | Logistics Automation: COVID-19 will lead to an acceleration of investments in automation for logistics infrastructure

Logistics automation has been a fast growing market pre-COVID-19 (10-15% per annum) as huge investments have been poured into automated warehouse and parcel logistics infrastructure to meet the surging e-commerce demand over the past 5 years. We have asked Jim Carlisle and Mike Kaczmarek of Thomas H. Lee Partners, L.P. ("THL"), a private equity firm with significant experience investing in the Automation industry, to share their perspectives on how the pandemic will impact the Logistics Automation industry:

E-commerce across the globe is spiking, reaching peak season sales levels for companies who can handle it. How do you see the longer term online demand developing?

We are witnessing a step-change in the e-commerce industry right now as consumer habits are fundamentally changing. Forced by the global lockdown, a much broader range of consumers are now purchasing a wider range of products (e.g. grocery, pharmaceuticals, etc.) online, on a global scale. We expect this change to remain permanent and hence we believe e-commerce adoption will increase well above pre-COVID-19 expectations (16%¹).

The pandemic is the ultimate stress test for retailers' and manufacturers' online capabilities. Is the current automated logistics infrastructure sufficient to cope with the additional demand?

No, that is one of the key lessons learned from the pandemic for many companies. Currently there is still a huge amount of manual labor required to handle e-commerce omnichannel logistics, and for the elevated demand levels that will come our way now, the current automation adoption of warehouses of ca. ~15% is simply not sufficient. Not even for companies who have a high degree of automation deployed across their operations.

The best example for that may be Amazon, which is one of the foremost adopters of automation technology overall.

Even with that, they still announced plans to hire 175,000² workers since the pandemic started.

Will we see even higher demand levels for intralogistics automation technology than before?

Yes. The value proposition or return on investment of automation was already very high pre-COVID-19. Automation is not only a tool to drive productivity or ROI, but also to fulfill fundamental business needs that cannot be achieved by manual labor in an efficient and reliable way. In addition, now the underlying demand drivers have fundamentally changed as we have discussed.

What are key technology trends you see in the logistics automation market?

We currently see significant innovation around advanced technologies for the last mile delivery, autonomous mobile robotics, automated picking technology and decentralized warehouse space (micro fulfillment).

In addition, the convergence of discrete automation technology with software and analytics is a key trend we are seeing across the sector, as technologies such as IOT, artificial intelligence and data analytics have matured and are beginning to be deployed more rapidly across the sector.

How do you think about new investments and valuation multiples in the current market?

Our appetite for new investments remains strong. Regarding multiples, currently there are a lot of variables

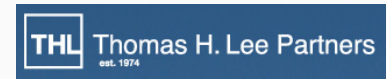
pushing and pulling against each other that impact valuation (e.g. earnings volatility, growth expectations, etc.). However, we believe automation assets will continue to generate attractive multiples due to their growth potential, which should be enhanced in a post-COVID-19 environment.



JAMES C. CARLISLE
MANAGING DIRECTOR



MICHAEL KACZMAREK
DIRECTOR



About Thomas Lee Partners, L.P. ("THL")

Based in Boston, MA, THL invests in growth companies headquartered primarily in North America. The firm focuses its investment activity across four industry sectors: Consumer, Financial Services, Healthcare and Technology & Business Solutions. Since its founding in 1974, THL has raised more than \$26 billion of equity capital, invested in over 150 companies and completed more than 400 add-on acquisitions representing an aggregate enterprise value at acquisition of over \$200 billion.

THL is currently investing from its 8th flagship fund and **a new fund fully dedicated to the Automation sector**. The firm's current Automation investments include Autostore, MHS, and Fortna, and several completed add-ons.

Platform Investments in Automation:



M&A activity in IAM: Interview with Frank Merkel

How is M&A activity trending in the current market environment?

Currently, the overall M&A market is heavily affected by increased volatility in capital markets, the real economy, and companies' focus on balance sheet strengthening and cash preservation. As a consequence, many transactions have been suspended or postponed, with deals in the industrial automation sector not being an exception. Also we see that financing of transactions has become more complex: lenders are willing to provide financing but generally seek higher yields and more structure on terms. For the few transactions that are still ongoing, processes are generally less time sensitive and more flexible with regards to deal structure.

How do you expect M&A activity in the Industrial Automation sector evolve over the next 12-24 months?

We believe that moving closer to 2021, M&A activity in the Industrial Automation sector will pick up again. We expect companies coming to market which are able to demonstrate their ability to rebound rather quickly from the recession and benefit from the growth opportunities ahead. These businesses typically have a

highly recurring business model and / or own a differentiated technology touching on some of the key growth trends such as e-commerce fulfillment, collaborative robotics, and intelligent automation. Therefore, I think we will see fewer transactions in the Industrial Automation sector, but expect competition for those companies which are for sale to be high, as liquidity in the private equity sector remains high and many corporates still have strong balance sheets.

Will valuation levels change fundamentally over the next 12-24 months?

Generally, highly volatile public markets and limited revenue visibility as well as deal execution risks have a negative impact on valuations in most sectors currently. However, we expect that high quality companies as mentioned above will continue to achieve a premium valuation, despite a tougher M&A environment. This becomes also evident, when looking at the share price development of our Industrial Automation peer group below; share prices of the warehouse automation-, factory automation-, and test & measurement companies in particular have bounced back to pre-pandemic levels already and are trading

at a significant premium compared to the broader industrials market. Further factors driving premium valuations are scarcity of high quality businesses, high liquidity in the private equity market and corporate's strong interest to invest into technology and engineering talent.

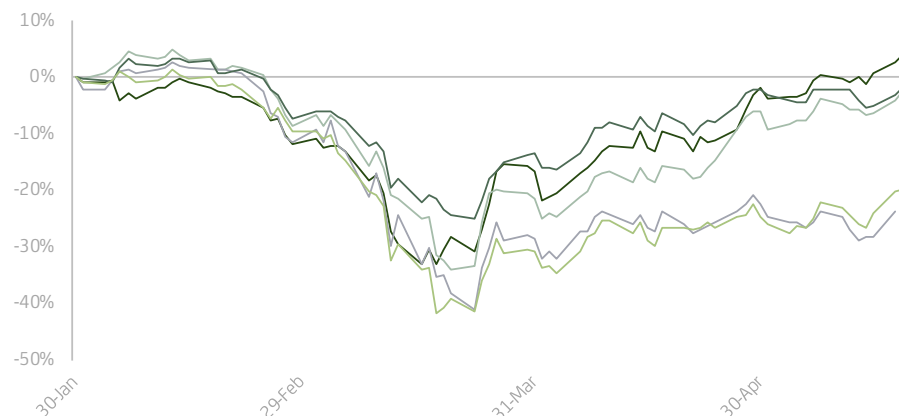


FRANK MERKEL
ALANTRA FRANKFURT
MANAGING PARTNER
GLOBAL HEAD OF ALANTRA'S INDUSTRIAL
AUTOMATION TEAM AND KEY SENIOR
MEMBER OF ALANTRA'S INDUSTRIALS TEAM



As countries are gradually reopening and liquidity in the market remains high, we expect the M&A market coming back, especially for companies who are demonstrating to be crisis resilient or expect fast growth. Industrial Automation & Machinery companies, especially those who are exposed to key trends such as e-commerce and intelligent automation or own a differentiated technology, are expected to grow even faster than before the pandemic and will be able to achieve high multiples, also in a tougher M&A environment.

Indexed market capitalization starting 30-Jan-20



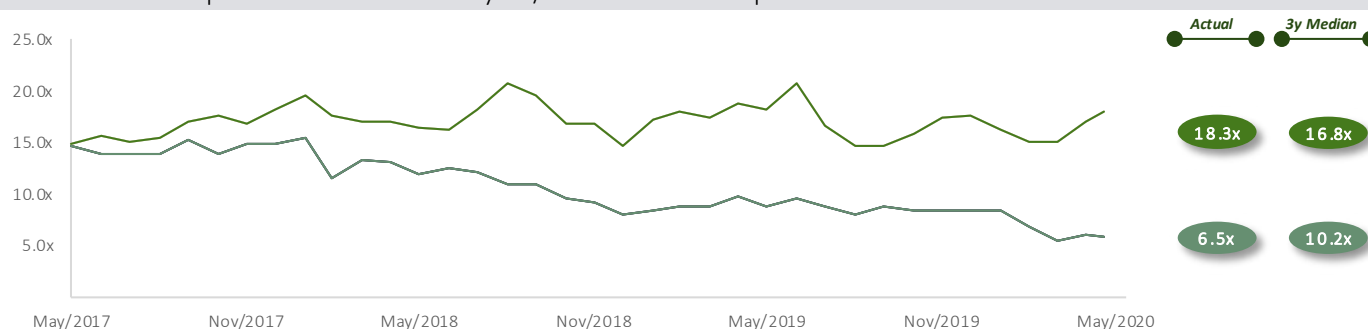
Our Warehouse Automation, Factory Automation, and Test & Measurement peer group has preserved value since the COVID-19 outbreak, compared to the broader Industrials Sectors

Index value as of 19-May-20

3.8%	Warehouse Automation
(2.0%)	Test and Measurement
(2.5%)	Factory Automation
(20.0%)	Packaging & Process Equipment
(23.6%)	S&P 500 Industrials

Valuation Update: Material Handling Technology

Historical Development Based on Monthly EV/LTM EBITDA Multiples



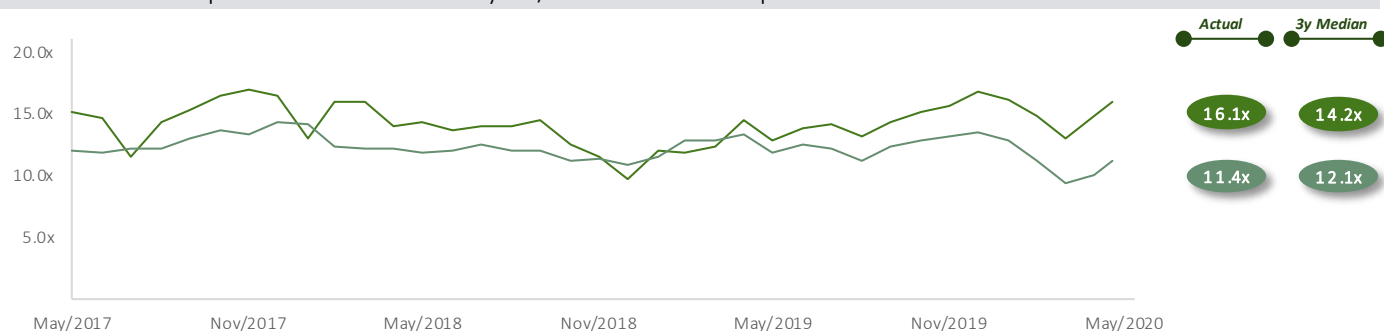
Warehouse Automation			Material Handling Equipment						
Company		EV in EURm	Share Price in EUR	% of LTM high	Revenue CAGR 2019-20	EBITDAMargin		EV / EBITDA	
						LTM	2020	LTM	2020
Warehouse Automation									
Daifuku	JP	8,442	69.3	99.0%	1.5%	11.0%	10.6%	20.3x	19.9x
Interroll	CH	1,385	1,740.8	72.4%	(4.2%)	16.4%	14.4%	16.4x	20.4x
Kardex	CH	924	137.5	80.8%	(4.4%)	14.5%	14.0%	13.5x	15.6x
Manhattan	US	4,324	68.7	82.7%	(3.5%)	19.3%	23.9%	39.5x	35.6x
Median					(3.9%)	15.5%	14.2%	18.3x	20.2x
Mean					(2.7%)	15.3%	15.7%	22.4x	22.9x
Material Handling Equipment									
Cargotec	FI	2,077	19.4	54.5%	(8.9%)	8.5%	6.9%	6.6x	9.8x
ColumbusMcKinnon	US	763	23.7	59.9%	(9.6%)	16.1%	12.0%	6.4x	10.4x
Jungheinrich	DE	3,532	15.8	56.6%	(7.6%)	8.8%	13.5%	10.0x	7.7x
Kion	DE	8,071	45.9	68.9%	(6.3%)	15.8%	16.7%	5.8x	6.3x
Konecranes	FI	2,358	19.9	57.2%	(5.0%)	5.9%	7.4%	11.9x	10.6x
Manitowoc	US	513	8.4	49.3%	(14.1%)	7.5%	3.6%	4.3x	11.6x
Median					(8.2%)	8.6%	9.7%	6.5x	10.1x
Mean					(8.6%)	10.4%	10.0%	7.5x	9.4x
Total Median					(6.3%)	11.0%	12.0%	10.0x	10.6x
Total Mean					(6.5%)	11.6%	11.0%	10.6x	12.5x

Selected Transactions since 2019

Date	Target	Description	Acquirer
Mar 20	Digital Applications International	Software company specializing in logistics automation solutions	Kion
Jan 20	eMotion Controls	Provider of control system and software for parcel sortation and fulfillment & distribution	MHS
Oct 19	Caljan	Global leader in parcel handling technology mainly for e-commerce related end-markets	Investment AB Latour
Sep 19	Cohesio Group (majority stake)	Provider of voice-controlled and robotics software solutions for the logistics industry	Koerber
Jun 19	AutoStore	World leader in robotics and software order fulfillment solutions to warehouses/distribution centers	Thomas H. Lee Partners
May 19	Motion06	Provider of curve conveyors and related handling technology for parcel handling and airports	Duravant
May 19	Mecalux (31%)	Global leader in industrial storage solutions and automated warehouses	Carrillo Family
Apr 19	Movecat	Specialist in advanced kinetic stage automation technology	LIFTKET Hoffmann
Mar 19	Fortna	Leading provider of distribution strategy, operations design and implementation, material handling automation and warehouse execution software systems	Thomas H. Lee Partners
Jan 19	ISI Automation (majority stake)	Provider of turnkey automation solutions	Jungheinrich
Jan 19	Groupe NetCo	Specialist in preventive and curative maintenance of belt and roller conveyors.	IK Investment Partners

Valuation Update: Factory Automation

Historical Development Based on Monthly EV/LTM EBITDA Multiples



Factory Automation			Industrial Conglomerates (with Automation Activities)						
Company		EV in EURm	Share Price in EUR	% of LTM high	Revenue Growth 2019-20	EBITDA Margin		EV / EBITDA	
						LTM	2020	LTM	2020
Factory Automation									
ATS	CA	1,465	14.0	94.7%	(2.7%)	11.8%	12.6%	13.0x	13.0x
Fanuc	JP	25,205	154.6	82.8%	(10.8%)	26.5%	27.8%	22.2x	22.8x
Omron	JP	10,364	57.8	97.6%	(9.9%)	12.1%	12.1%	14.9x	15.5x
Rockwell	US	23,362	185.4	96.7%	(7.8%)	21.9%	18.2%	17.4x	22.6x
Siasun	CN	2,796	1.7	75.7%	11.6%	21.8%	15.5%	37.8x	45.7x
Teradyne	US	8,957	55.9	74.9%	12.1%	30.5%	29.1%	13.0x	13.1x
Median					(5.3%)	21.8%	16.9%	16.1x	19.0x
Mean					(1.2%)	20.8%	19.2%	19.7x	22.1x
Industrial Conglomerates (with Automation Activities)									
ABB	CH	43,767	17.0	73.6%	(14.6%)	12.6%	10.2%	14.0x	19.7x
Emerson	US	35,626	51.0	71.1%	(11.0%)	20.9%	20.0%	10.4x	11.9x
Honeywell	US	92,305	120.7	71.7%	(13.0%)	24.0%	23.9%	11.6x	13.2x
Rexnord	US	3,891	25.0	76.6%	(8.7%)	19.4%	20.7%	10.6x	10.9x
Siemens	DE	112,256	92.3	77.0%	(5.2%)	11.3%	14.1%	11.4x	14.6x
Median					(11.0%)	19.4%	20.0%	11.4x	13.2x
Mean					(10.5%)	17.7%	17.8%	11.6x	14.1x
Total Median					(8.7%)	20.9%	18.2%	13.0x	14.6x
Total Mean					(5.5%)	19.3%	18.6%	16.0x	18.5x

Selected Transactions since 2019

Date	Target	Description	Acquirer
Mar 20	Ipiranga and Shuton	Manufacturer of ball screws for machine tools	Nadella
Dec 19	Tawi	Manufacturer of smart lifting solutions for industrial and parcel handling applications	Piab
Nov 19	REI Automation	Industrial automation integrator, focusing on the medical, electronics and consumer goods industries	Hahn Group
Oct 19	AutoGuide Mobile Robots	AMRs for material transport of payloads up to 10,000 pounds for the manufacturing, warehouse and logistics markets	Teradyne
Oct 19	ReaLead Automation	Provider of automation solutions for die casting parts and electric vehicle parts	BBS Automation
Oct 19	InSystems Automation	Provider of automation solutions including an autonomous mobile robot solution	ASTI Mobile Robotics
Sep 19	Carl Cloos Schweißtechnik	Manufactures and delivers robotic welding systems	Estun Automation
Sep 19	IXLOG	Provider of business intelligence and analytics solutions for industrial companies	ATS Automation
May 19	ATOP	Manufacturer of winding machinery for electric motor components	IMA
Apr 19	JR Automation Technologies	System integrator for automated manufacturing technology	Hitachi

Valuation Update: Packaging & Process Machinery

Historical Development Based on Monthly EV/LTM EBITDA Multiples



Packaging & Process Machinery – Focus on Food Industry

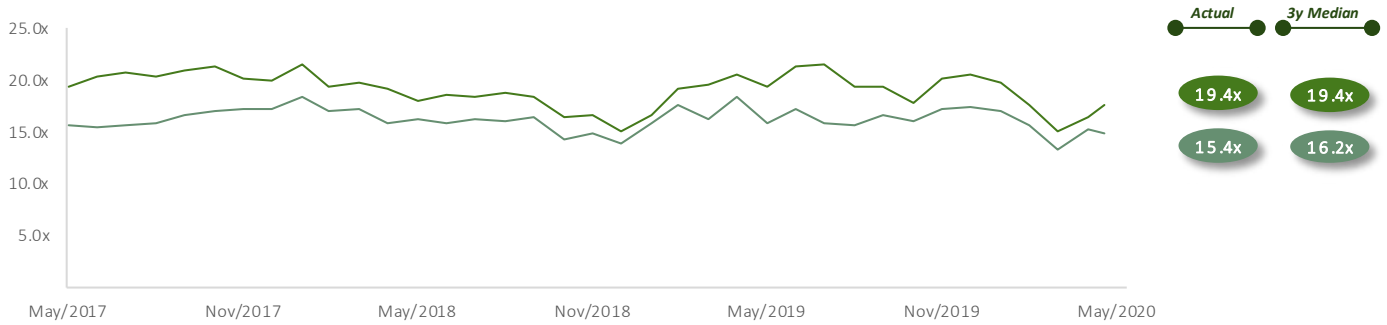
Company		EV in EURm	Share Price in EUR	% of LTM high	Revenue Growth 2019-20	EBITDA Margin LTM	2020	EV / EBITDA LTM	2020
Packaging & Process Machinery – Focus on Food Industry									
Bobst	CH	899	53.4	77.2%	(13.0%)	6.7%	5.8%	8.9x	11.6x
CKD	JP	981	15.0	83.6%	6.5%	11.0%	11.0%	10.5x	10.0x
GEA	DE	4,619	25.4	83.7%	(4.8%)	9.7%	9.5%	9.7x	10.4x
IMA	IT	3,011	53.7	71.2%	(4.2%)	17.4%	16.0%	10.8x	12.3x
JBT	US	2,808	69.5	59.3%	(12.8%)	13.8%	14.4%	11.2x	12.5x
Krones	DE	1,763	56.2	74.4%	(16.4%)	5.7%	5.7%	7.7x	9.2x
Marel	IS	3,304	4.3	100.0%	(3.8%)	15.0%	14.7%	17.5x	18.2x
Shibuya	JP	520	24.8	88.3%	(6.8%)	10.8%	10.1%	5.3x	6.0x
Middleby	US	5,012	58.9	45.0%	(22.3%)	22.3%	18.0%	8.4x	13.2x
Median					(6.8%)	11.0%	11.0%	9.7x	11.6x
Mean					(8.6%)	12.5%	11.7%	10.0x	11.5x
Total Median					(6.8%)	11.0%	11.0%	9.7x	11.6x
Total Mean					(8.6%)	12.5%	11.7%	10.0x	11.5x

Selected Transactions since 2019

Date	Target	Description	Acquirer
Feb 20	Weco	Manufacturer of optical color and defect sorting equipment	Duravant
Jan 20	RAM Fry Dispensers	Manufacturer of automated frozen fry dispensing equipment	Middleby
Nov 19	WOLF Verpackungsmaschinen	Manufacturer of vertical form fill and seal packaging machinery	The Packaging Group / HQ Equita
Oct 19	Jet Label & Packaging	Manufacturer of label and printed tape	ProMach
Oct 19	Grip Pak	Manufacturer of bottle handling solutions for beverage companies	ProMach
Sep 19	Schneider Packaging Equipment Company	Manufacturer of end-of-line case packing and robotic palletizing machinery	Gen Nx360 Capital Partners
Jul 19	Standard-Knapp	Manufacturer of carton-, tray- and shrink wrap packaging machinery	A+F Packaging Solutions
Jul 19	Packaging Progressions	Manufacturer of automated packaging technologies for customers in the protein and bakery segments	Middleby
Jul 19	Bosch Packaging (Now: Syntegon Technology)	Manufacturer of processing and packaging technology	CVC Capital Partners
Jul 19	Fritsch	Manufacturer of production equipment for bakeries	Multivac
Jun 19	Prime Equipment Group	Manufacturer of poultry processing equipment	JBT
Apr 19	Proseal	Manufacturer of tray sealing technology	JBT
Apr 19	Quest Industrial	Provider of full-service robotic integration solutions	ProMach

Valuation Update: Measuring and Testing

Historical Development Based on Monthly EV/LTM EBITDA Multiples



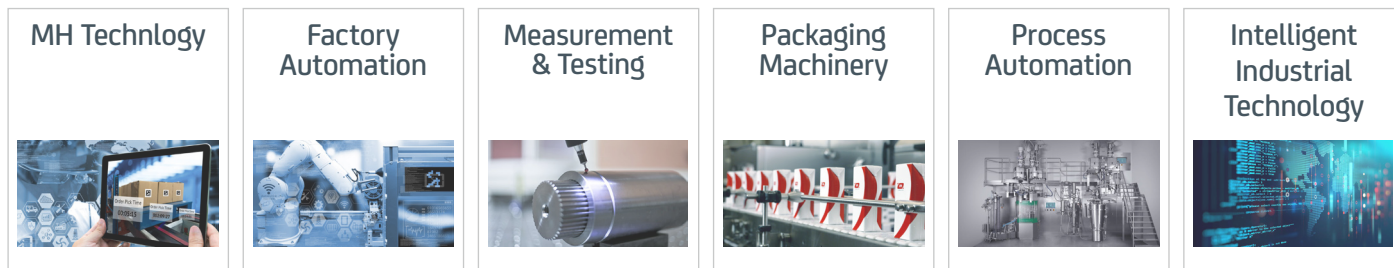
Test and Measurement Companies				Diversified Companies with Metrology Activities					
Company		EV in EURm	Share Price in EUR	% of LTM high	Revenue CAGR 2019-20	EBITDA Margin		EV / EBITDA	
						LTM	2020	LTM	2020
Test and Measurement Companies									
Bruker	US	6,288	39.5	78.9%	(2.5%)	17.3%	15.3%	19.7x	23.3x
Faro	US	760	50.9	85.3%	(7.7%)	7.5%	9.8%	30.4x	27.1x
Fortive	US	23,120	54.3	71.2%	(3.1%)	22.3%	22.7%	15.5x	16.6x
Hexagon	SE	18,514	44.6	80.8%	(3.0%)	28.7%	31.5%	16.6x	16.0x
Keyence	JP	74,109	338.8	97.9%	0.9%	52.7%	53.5%	30.4x	29.4x
Spectris	GB	3,494	29.9	86.8%	(10.4%)	9.5%	17.4%	19.1x	13.0x
Median					(3.0%)	19.8%	20.1%	19.4x	20.0x
Mean					(4.3%)	23.0%	25.0%	21.9x	20.9x
Diversified Companies with Metrology Activities									
Ametek	US	19,529	76.4	81.4%	(6.4%)	27.4%	28.0%	15.4x	17.2x
Jenoptik	DE	1,226	21.6	71.1%	(4.0%)	14.7%	13.6%	9.8x	11.4x
Olympus	JP	19,708	14.5	79.1%	(2.8%)	23.8%	22.0%	12.5x	14.5x
Renishaw	GB	3,105	43.4	89.1%	(17.5%)	14.9%	25.2%	32.8x	28.2x
Roper	US	39,022	336.2	92.7%	1.7%	36.0%	35.2%	21.9x	22.4x
Median					(4.0%)	23.8%	25.2%	15.4x	17.2x
Mean					(5.8%)	23.4%	24.8%	18.5x	18.7x
Total Median					(3.1%)	22.3%	22.7%	19.1x	17.2x
Total Mean					(5.0%)	23.2%	24.9%	20.4x	19.9x

Selected Transactions since 2019

Date	Target	Description	Acquirer
Feb 20	ISRA Vision Systems	Developer of robotic vision systems, inline measurement technology and inspection technology	Atlas Copco
Feb 20	1stVision	Distributor of machine vision and imaging products	Ambienta
Oct 19	Sualab	Developer of AI-based vision software for inspection automation solutions	Cognex
Sep 19	Gatan	Manufacturer of instrumentation and software used to enhance and extend the operation and performance of electron microscopes	AMETEK
Sep 19	BTG Eclépsens	Provider of integrated, highly specialized process solutions for the pulp and paper industry	Voith
Sep 19	FT System	Manufacturer of inspection and control devices for bottling and packaging	Antares
Jul 19	SVS-Vistek	Manufacturer of high-quality cameras for machine vision application	TKH Group
Jun 19	LAP Laser	Developer of laser-based projection and measuring systems for medical and industrial applications	IK Investment Partners
May 19	Dieter Busch Prüftechnik	Developer and manufacturer of measurement and testing systems	Fluke Corporation
Apr 19	GOM	Manufacturer of 3D coordinate measuring and 3D testing systems	Carl Zeiss
Jan 19	Etalon	Provider of system solutions for geometric analysis and accuracy improvement for measuring machines	Hexagon

Alantra's IAM Coverage

IAM verticals covered by Alantra



6 IAM verticals covered by a dedicated team in Europe and in the US



Market driven by secular mega trends such as intelligent automation and e-commerce

50+ Successfully completed transactions in the IAM sector since 2010

Recent IAM Transactions



Alantra IAM Core Team



Frank Merkel
Managing Partner, Germany
frank.merkel@alantra.com



Christopher Donegan
Managing Director, United States
chris.donegan@alantra.com



Michaela Pfeifenberger
Director, Germany
michaela.pfeifenberger@alantra.com



Jens Schmadel
Director, Germany
jens.schmadel@alantra.com



Lukas Schmitt
Vice President, Germany
lukas.schmitt@alantra.com



Damien Perera
Vice President, United States
damien.perera@alantra.com

ALANTRA

POSSIBILITY IS IN THE ASCENT

Austria & CEE
Belgium
China
Denmark
France

Germany
Greece
India
Ireland
Italy

Latin America
Mexico
Netherlands
Portugal
Spain

Sweden
Switzerland
United Kingdom
United States

Alantra is a global investment banking, credit portfolio advisory and alternative asset management firm focusing on the mid-market with offices across Europe, the US, Latin America and Asia.