

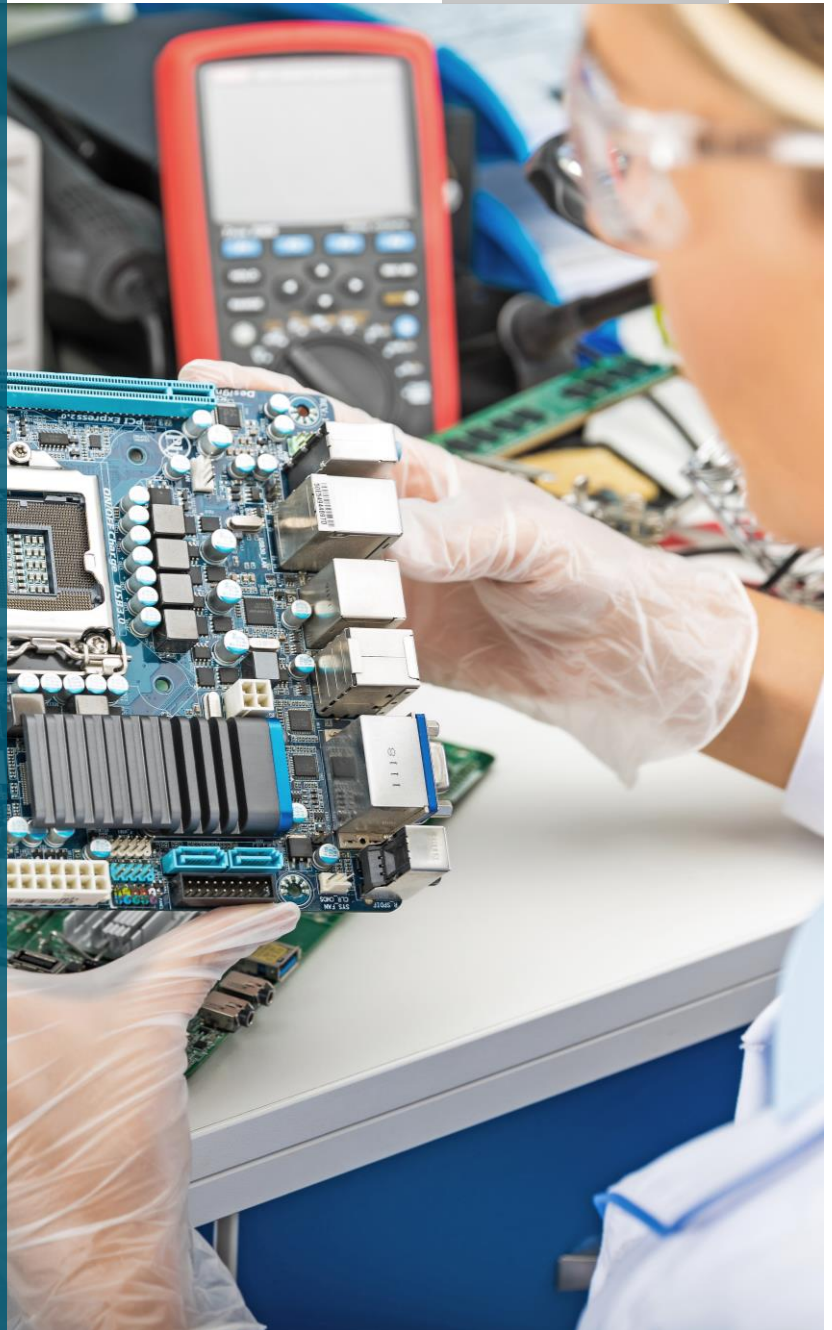
Newsletter

Summer 2020

Electronic Manufacturing Services

Inside:

- Developments
- M&A activity
- Valuation
- About Clearwater International
- International team and contacts



Executive summary

Executive summary of the EMS and ODM industry

The European EMS market grew to a total volume of more than €33bn in 2019 with an expected double-digit annual decline in 2020 while secular growth impulses off-setting the downturn to some extent.

The pandemic will set the “new normal” in the operations of EMS companies focussing on supply chain, remote monitoring and working, increased automated production and diversification of procurement sources.

The consolidation within the EMS industry is expected to accelerate due to COVID-19.

Valuation level of EMS players worldwide

By the end of July 2020, the valuation levels of the EMS industry recovered to levels of pre-COVID-19 period.

In general, global small and medium-sized EMS companies continue to show significantly higher valuation levels on average (c. EV/EBITDA $\geq 7x$) in comparison to large EMS providers (EV/EBITDA c. 5x) and European players (EV/EBITDA c. 6x).

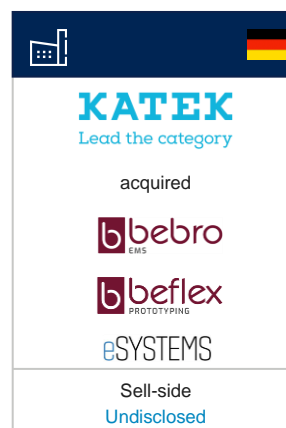
M&A activity in the EMS industry

In the second half of 2019 the EMS industry has seen some landmark transactions including the acquisition of bebro Group by KATEK and the acquisition of Asteelflash by USI in December 2019.

Transaction highlights in the global EMS sector

- Lindsay Goldberg LLC-backed portfolio company, Creation Technologies LP, has acquired Applied Technical Services Corporation (ATS)
- BizLink Holding has agreed to acquire Speedy Industrial Supplies Pte Ltd for a consideration of €43m
- Intervala, LLC has acquired Princeton Technology Corporation
- NCAB Group has agreed to acquire The Bare Board Group (US) and Flatfield Multi Print International (NL)
- Prime Technological Services has agreed to acquire iTechServ and TeligentEMS
- Incap Corporation has agreed to acquire AWS Electronics Group
- Universal Scientific Industrial (USI) has agreed to acquire Asteelflash Group for a cash and equity consideration of \$452.23m

Clearwater International's transaction highlight



Clearwater International advises MAGENWIRTH Technologies GmbH on the sale of bebro electronic GmbH and eSystems MTG GmbH to KATEK SE.

bebro is offering services in the area of electronic and mechatronic assemblies, devices and systems, covering the complete value chain of an

EMS service provider. The spectrum ranges from development and prototyping, to the production of medium batch sizes and after-sales services. The group includes the subsidiaries befex electronic GmbH (beflex) and bebro electronic s.r.o. based in Czech Republic. Through close collaboration with customers and engineers, befex specialises in the development of prototypes and small batches.

eSystems develops electric mobility solutions and systems for renowned automobile manufacturers worldwide, such as intelligent charging solutions for electric vehicles as part of Smart Home and Smart Grid. Together, bebro and eSystems generate a turnover of approximately €90m and employ 550 staff.



bebro Group is offering services in the area of electronic and mechatronic assemblies, devices and systems, covering the complete value chain of an EMS service provider with extensive development and prototyping capabilities



Developments

Overview of the European industry

The European EMS sector reached a market size in excess of €33.0bn in 2019. The impacts of COVID-19 are hard to quantify, but experts expect a double-digit decline for 2020. However, continued secular growth trends including the expansion of the 5G network, IoT, ageing population and electrification of vehicles may offset the adverse development of the EMS industry.

In the wake of the pandemic crisis, EMS companies were facing numerous challenges. An immediate impact of the outbreak of COVID-19 were increased sick leave, decreased capacity, supply chain disruptions and growing uncertainties. Furthermore, decreased order intake during March until June 2020 were observed, especially in the automotive industry. The railway sector showed a heterogeneous reaction, whereas the medical technology experienced an upswing.

Reshaping the production in the electronics industry after COVID-19

The global pandemic and the accompanied lockdown has brought the "new normal", potentially impacting permanently the operations of electronics companies. An example of such a change is to work from home and general social distancing, which may continue as manufacturers see more benefit in keeping these changes for the long-term.

Another permanent impact is the use of robotics and remote monitoring, which allows companies to gain more control of their operations and processes by incorporating the use of automation in various steps of the manufacturing processes. Therefore, companies have the ability to adjust their production and shipping schedules immediately.

Furthermore, diversifying the supply chain in order to avoid disruptions, as seen during the lockdown, is another measure to mitigate risk and stabilise the business.

A medium-term strategy is diversification of vendor partnerships. By having a wide network and partnerships, companies are able to fill shortages or reduce excess in tumultuous times. Reducing this risk and having partnerships in the open market will establish healthier supply chain. Many manufacturers will be able to benefit by taking the lessons they've learned as an opportunity to enhance their supply chains.

Quantitative outlook

The "book-to-bill" ratio, a ratio of orders received to the amount billed for a specific period, is an indicator of mid-term developments.

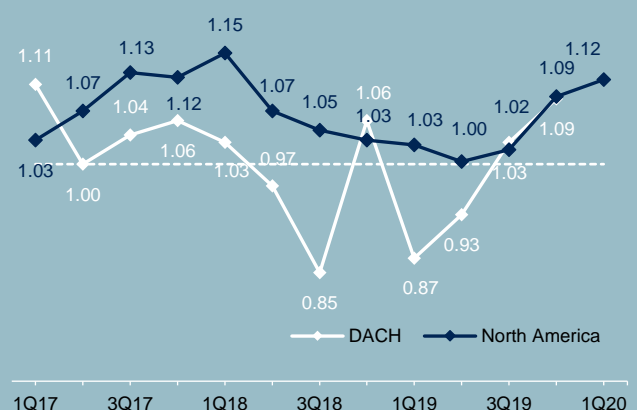
In the DACH printed circuit board segment, Q1 2020 experienced a strong increase compared to the previous quarter, however not yet taking the impacts of COVID-19 into consideration.

Outlook of the of European EMS industry

Experts estimate approx. 8-12% of the capacity was lost in 2020, but this also affected the respective end-markets. A double-digit decline in sales in the European EMS industry for 2020 is anticipated by experts. It could be up to minus 14% in the western countries, up to minus 8% in the eastern countries and around 8-10% in DACH.

The consolidation in the EMS market is expected to further accelerate due to the effects of COVID-19 leading to up to 30% of EMS companies leaving the market (mergers, acquisitions, closures, insolvencies) within the next ten years.

"Book-to-bill" ratio of PCB segment in DACH and North America



Source: Reed electronics, ZVEI, evertiq, Clearwater Research, in4ma
Note: CEE = Central and Eastern Europe; MENA = Middle East & North Africa

M&A activity

Selected EMS transactions worldwide

Date	Target	Bidder	Description
05/2020	Applied Technical Services Corp. 	Creation Technologies LP 	Lindsay Goldberg LLC-backed portfolio company, Creation Technologies LP, has acquired Applied Technical Services Corporation, a US-based provider of EMS including design, PCB assembly, complete box builds, system integration and testing.
04/2020	Princeton Technology Corp. 	Intervala, LLC 	Intervala, LLC has acquired Princeton Technology Corporation, a US-based company engaged in the manufacture of electro-mechanical products.
04/2020	The Bare Board Group, Inc. 	NCAB Group AB 	NCAB Group has acquired The Bare Board Group, a US-based company engaging in manufacturing of PCBs.
03/2020	Flatfield Multi Print International B.V. 	NCAB Group AB 	NCAB Group has acquired Flatfield Multi Print International B.V., the Netherlands-based company that provides outsourced manufacturing services of PCBs.
02/2020	Speedy Industrial Supplies Pte Ltd 	BizLink Holding 	BizLink Holding has acquired Speedy Industrial Supplies, a Singapore-based company engaged in manufacturing of wire harness and cable assemblies, PCB assemblies, box build and system integration.
02/2020	iTechServ, LLC 	Prime Technological Services, LLC 	Prime Technological Services, LLC has acquired iTechServ, LLC, a US-based provider of printed circuit boards, electronics assemblies and top level electrical and electronic products for OEMs.
01/2020	AWS Electronics Group Limited 	Incap Corporation 	Incap Corporation has acquired AWS Electronics Group Limited, a UK-based EMS provider, offering services for the whole product life cycle from design and low-cost manufacturing to contract service and repair.
01/2020	TeligentEMS, LLC 	Prime Technological Services, LLC 	Prime Technological Services, LLC has acquired TeligentEMS, LLC, a US-based company engaged in providing electronics manufacturing services, including mechanical, electronic and system-level assembly.
01/2020	RAFI GmbH & Co KG 	Oaktree Capital Management LP 	Oaktree Capital Management LP has acquired RAFI GmbH & Co KG, a Germany-based developer and manufacturer of components for man-machine communication.
12/2019	Varitron Technologies USA Inc. 	Intervala, LLC 	Intervala, LLC has acquired the US-based operations of Varitron Technologies Inc, which is a providers of high-technology electronics manufacturing services.
12/2019	Huf Electronics Dusseldorf GmbH 	Katek SE 	KATEK SE has acquired Huf Electronics Dusseldorf GmbH, a Germany-based manufacturer of control units and circuit boards for the automotive industry.
12/2019	AsteelFlash Group 	Universal Scientific Industrial (Shanghai) Co., Ltd. 	Universal Scientific Industrial (Shanghai) Co., Ltd. has acquired AsteelFlash Group, a France-based company engaged in providing electronic manufacturing services.
12/2019	Loewe (electronic manufacturing services unit) 	Dr Schneider Holding GmbH 	Dr Schneider Holding GmbH has acquired the Germany-based electronic manufacturing services unit of Loewe.
11/2019	Bestronics Incorporated 	New Water Capital, L.P. 	New Water Capital, L.P. has acquired Bestronics Incorporated, a US-based EMS provider to OEMs, such as networking, utility, medical instrumentation, wireless, RF applications and consumer electronics.
09/2019	East West Manufacturing, LLC 	Adcotron EMS, Inc. 	East West Manufacturing, LLC has acquired Adcotron EMS, Inc., a US-based EMS provider, including advanced PCB assemblies, box-build assemblies, testing and new product introduction services.

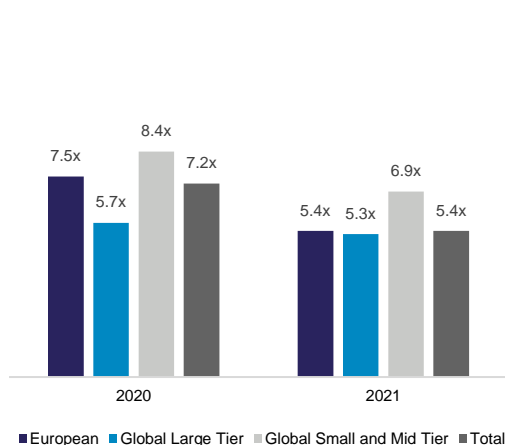
Valuations

Comparable company valuation – EMS industry

Company	MCAP (EURm)	EV (EURm)	EV/Sales			EV/EBITDA			EV/EBIT			Sales growth			EBITDA margin			EBIT margin		
			2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
European																				
TT Electronics	301	383	0.78x	0.74x	0.70x	7.8x	6.5x	5.8x	13.4x	10.0x	8.5x	(9.0%)	6.1%	4.9%	10.0%	11.3%	12.0%	5.8%	7.4%	8.2%
Scanfil	331	371	0.64x	0.61x	0.60x	7.2x	6.6x	6.5x	10.2x	9.0x	8.8x	0.5%	3.5%	2.5%	8.8%	9.3%	9.2%	6.3%	6.8%	6.8%
Kitron	200	265	0.83x	0.76x	0.71x	8.6x	7.7x	7.3x	12.6x	10.9x	10.1x	5.5%	9.0%	8.0%	9.7%	9.9%	9.7%	6.6%	7.0%	7.0%
Cicor Technologies	112	127	0.57x	0.54x	0.51x	6.8x	5.4x	5.0x	13.2x	9.0x	8.0x	(6.7%)	5.3%	5.6%	8.5%	10.0%	10.3%	4.3%	6.0%	6.4%
Lacroix	90	142	0.33x	0.30x	0.29x	7.5x	5.0x	4.4x	15.0x	7.9x	6.4x	(10.7%)	9.4%	4.8%	4.4%	6.0%	6.5%	2.2%	3.8%	4.5%
Incap	67	66	0.68x	0.63x	0.61x	6.9x	5.4x	5.4x	8.2x	6.6x	6.1x	37.2%	7.0%	4.0%	9.8%	11.6%	11.3%	8.2%	9.5%	10.0%
HANZA Holding	43	80	0.40x	0.36x	0.34x	7.5x	4.7x	4.2x	21.5x	9.4x	7.9x	4.0%	9.8%	5.3%	5.3%	7.7%	8.2%	1.8%	3.8%	4.3%
Mean			0.60x	0.56x	0.54x	7.5x	5.9x	5.5x	13.4x	9.0x	8.0x	3.0%	7.2%	5.0%	8.1%	9.4%	9.6%	5.0%	6.3%	6.7%
Median			0.64x	0.61x	0.60x	7.5x	5.4x	5.4x	13.2x	9.0x	8.0x	0.5%	7.0%	4.9%	8.8%	9.9%	9.7%	5.8%	6.8%	6.8%
Global Large Tier																				
Quanta Computer	8,477	8,447	0.28x	0.27x	0.26x	10.2x	8.8x	8.1x	14.6x	12.2x	11.3x	(2.7%)	2.8%	3.2%	2.7%	3.1%	3.3%	1.9%	2.2%	2.3%
Pegatron	5,153	5,959	0.14x	0.14x	0.14x	5.6x	5.3x	4.9x	12.2x	10.0x	8.8x	(0.0%)	3.7%	2.1%	2.6%	2.6%	2.8%	1.2%	1.4%	1.6%
Flex Ltd	4,411	5,831	0.29x	0.27x	0.26x	3.9x	4.7x	4.6x	8.2x	7.0x	6.5x	(8.7%)	7.4%	4.9%	7.5%	5.9%	5.7%	3.6%	3.9%	4.0%
Jabil Inc	4,217	6,282	0.27x	0.26x	0.25x	4.5x	4.1x	4.0x	8.8x	7.5x	7.2x	3.8%	1.9%	5.5%	5.9%	6.4%	6.2%	3.1%	3.5%	3.5%
Wistron	3,190	4,257	0.16x	0.15x	0.15x	6.1x	5.3x	5.0x	10.4x	9.3x	8.7x	(1.6%)	7.0%	1.6%	2.7%	2.9%	3.0%	1.6%	1.6%	1.7%
Compal Electronics	2,658	2,898	0.10x	0.10x	0.09x	5.8x	5.5x	4.9x	9.5x	8.6x	8.0x	(0.3%)	(1.3%)	7.9%	1.7%	1.8%	1.9%	1.0%	1.2%	1.2%
Foxconn Technology	2,454	828	0.27x	0.26x	0.28x	3.3x	3.0x	3.1x	4.0x	3.6x	3.7x	2.0%	2.1%	(8.0%)	8.2%	8.7%	9.2%	6.8%	7.4%	7.7%
Fabrinet	2,053	1,685	1.17x	1.09x	0.98x	11.0x	9.8x	8.7x	13.5x	11.9x	10.6x	2.4%	7.9%	11.0%	10.6%	11.1%	11.3%	8.7%	9.2%	9.3%
Plexus	1,705	1,810	0.63x	0.59x	0.55x	10.7x	9.2x	8.2x	15.4x	12.5x	11.1x	2.4%	6.9%	6.4%	5.9%	6.4%	6.7%	4.1%	4.7%	5.0%
Sanmina	1,505	1,462	0.25x	0.24x	-	5.1x	4.4x	-	7.8x	6.6x	-	(19.6%)	5.1%	-	4.9%	5.4%	-	3.2%	3.6%	-
Mean			0.36x	0.34x	0.33x	6.6x	6.0x	5.7x	10.4x	8.9x	8.4x	(2.2%)	4.4%	3.8%	5.3%	5.4%	5.6%	3.5%	3.9%	4.0%
Median			0.27x	0.26x	0.26x	5.7x	5.3x	4.9x	9.9x	8.9x	8.7x	(0.2%)	4.4%	4.9%	5.4%	5.7%	5.7%	3.1%	3.5%	3.5%
Global Small and Mid Tier																				
Celestica	785	930	0.19x	0.19x	-	4.1x	3.8x	-	6.9x	6.3x	-	(5.3%)	0.0%	-	4.7%	5.1%	-	2.8%	3.1%	-
Hana Microelectronics	680	418	0.83x	0.75x	0.68x	6.6x	5.3x	5.5x	15.1x	11.4x	10.0x	(15.2%)	11.1%	8.9%	12.5%	14.2%	12.5%	5.5%	6.6%	6.9%
CTS	565	591	1.76x	1.58x	1.46x	13.2x	8.2x	-	23.2x	11.7x	-	(19.5%)	11.2%	8.3%	13.3%	19.2%	-	7.6%	13.5%	-
Ducommun	353	631	1.07x	1.03x	0.95x	8.8x	8.1x	7.4x	16.0x	13.9x	12.0x	(9.5%)	4.0%	9.3%	12.3%	12.8%	12.8%	6.7%	7.4%	7.9%
VS Industry	387	395	0.62x	0.57x	0.50x	8.2x	6.1x	5.6x	14.6x	9.6x	8.4x	(23.1%)	8.4%	14.3%	7.5%	9.4%	8.9%	4.3%	6.0%	6.0%
SVI	183	225	0.57x	0.53x	0.49x	8.5x	7.7x	7.0x	16.9x	15.0x	11.8x	(7.8%)	9.0%	6.6%	6.7%	6.8%	7.0%	3.4%	3.5%	4.2%
Mean			0.84x	0.77x	0.82x	8.2x	6.5x	6.4x	15.5x	11.3x	10.5x	(13.4%)	7.3%	9.5%	9.5%	11.3%	10.3%	5.0%	6.7%	6.2%
Median			0.72x	0.66x	0.68x	8.4x	6.9x	6.3x	15.6x	11.5x	10.9x	(12.4%)	8.7%	8.9%	9.9%	11.1%	10.7%	4.9%	6.3%	6.4%

EV/EBITDA by Size and Geography

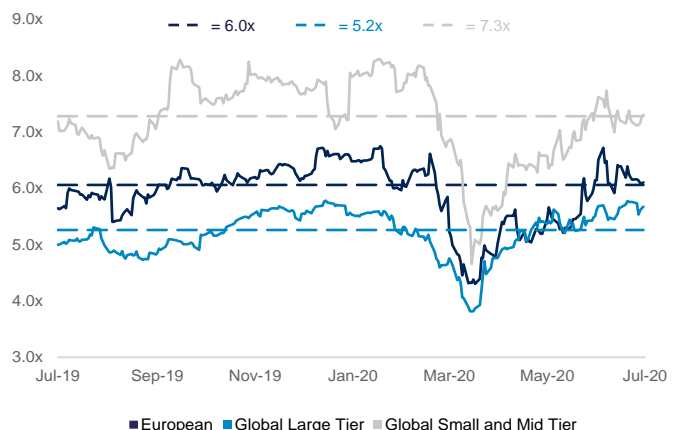
Median EV/EBITDA



Size by market cap: Large-tier > €1.0bn
Medium-tier €500m - €1.0bn
Small-tier < €500m

EV/NTM EBITDA Development

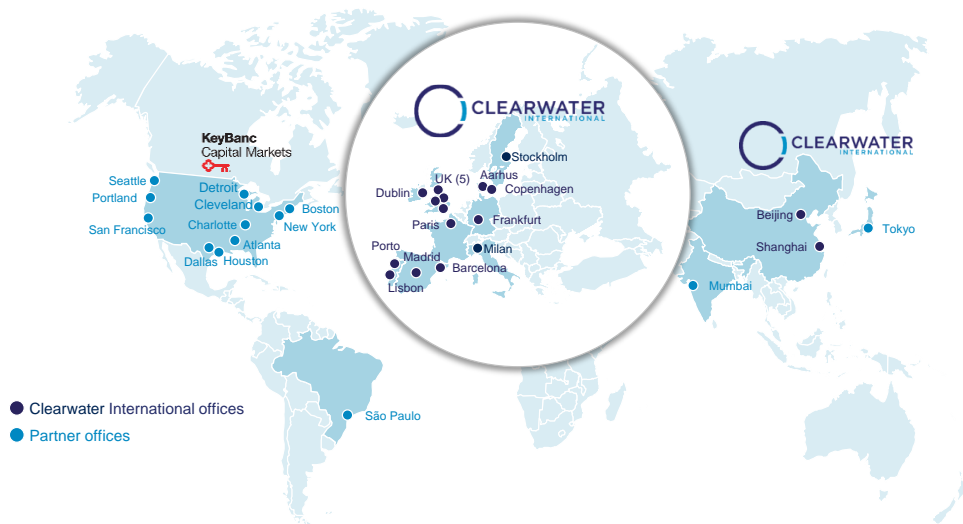
Median EV/NTM EBITDA



Source: Factset 3rd July 2020, Clearwater Research

About Clearwater

Facts and figures



10 Industry sectors



Coordinating as a single team, our 300+ experienced professionals have been responsible for the successful completion of more than 1,700 deals worth in excess of €91bn. The Enterprise Value of our successfully completed transaction is on average close to €100m.

Working alongside directors, shareholders and investors we advise on all aspects of corporate finance from mergers and acquisitions (M&A), company sales through to management buy-outs (MBOs) and fundraising transactions.

Our independence from any larger financial institution or consulting firm ensures that we can give truly objective advice, guiding clients through the challenges they face. All projects are partner-led, offering high levels of personal service, and laying the groundwork for lasting relationships. Many of our clients return to us for advice on multiple occasions.

With 19 offices around the world and deals completed in 31 countries, our team makes us a natural choice for transactions requiring knowledge of, and access to global markets.

International team



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