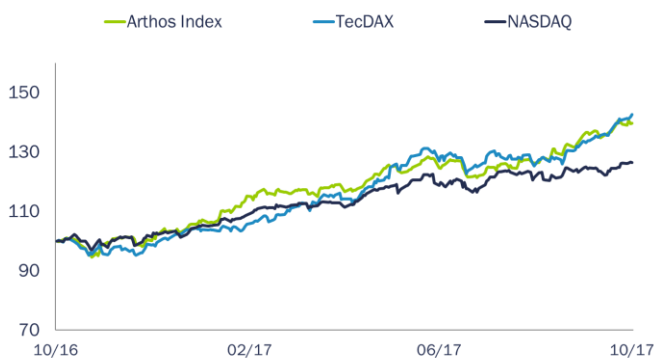


**Vision Technology Stock Market Performance**

Company Name	EV € mn	Sales € mn	Share price	Local curr.	Δ 52W High	2017E EV/EBITDA
<b>ARTHOS Vision Technology Peers</b>						
ams AG	5.516,7	611,2	69,0	EUR	(0,2%)	27,7x
Ametek	14.689,5	3.497,5	67,4	USD	(0,3%)	16,1x
Basler	610,5	127,5	184,5	EUR	(6,2%)	16,9x
Cognex	8.301,4	512,9	118,9	USD	(0,6%)	36,2x
Datalogic	1.861,1	593,9	31,6	EUR	(0,3%)	18,1x
Electro Sci. Ind.	359,2	163,1	14,8	USD	(2,0%)	13,5x
FARO Techn.	447,9	294,1	40,0	USD	(1,5%)	36,9x
Kapsch TrafficCom	621,2	663,7	49,3	USD	(17,9%)	8,2x
FLIR Systems	5.043,0	1.508,4	42,7	USD	(1,7%)	14,9x
Hamamatsu	3.730,3	988,1	3.610,0	JPY	(1,2%)	14,7x
Hexagon	17.463,7	3.272,2	407,1	SEK	(8,5%)	16,6x
Isra Vision	746,2	138,8	169,9	EUR	(1,0%)	17,3x
Jenoptik	1.641,0	706,3	29,0	EUR	(3,1%)	15,5x
Keyence	50.059,1	3.485,5	60.120,0	JPY	(2,1%)	26,1x
Nanometrics	475,6	211,8	27,4	USD	(15,4%)	11,2x
Novanta	1.343,9	372,3	44,1	USD	(4,0%)	16,5x
Orbotech	1.641,8	717,2	43,4	USD	(1,0%)	10,0x
Oxford Instr.	754,2	408,1	9,7	GBP	(17,1%)	12,6x
Perceptron	59,0	68,3	7,8	USD	(13,3%)	10,9x
Renishaw	3.906,2	611,1	48,1	GBP	(4,3%)	23,1x
Rudolph Techn.	588,0	213,7	26,8	USD	(2,0%)	12,0x
Teledyne Techn.	5.854,4	2.030,8	163,5	USD	(1,4%)	16,3x
TKH Group	2.566,9	1.412,4	55,8	EUR	(2,8%)	14,4x
Viscom	245,8	85,9	29,1	EUR	(6,7%)	15,6x
<b>Mean</b>					<b>(4,8%)</b>	<b>17,6x</b>
<b>Median</b>					<b>(2,0%)</b>	<b>15,9x</b>

Peer Group includes companies with business focus on Vision Technology; Closing share price as of 13.10.2017; Sales as of last twelve months.

**ARTHOS Vision Technology Index Performance**



ARTHOS Vision Technology Index includes the companies listed above

**Historic Multiple Analysis (last 5 years)**



Median development of historic EV/EBITDA Multiple of the ARTHOS Vision Technology Peer Group

**Personal Note**



Stock market prices for vision companies increased by 40% within the last year, which is even more than for other tech areas. To a minor extend this is based on better earnings, but mainly because higher multiples are paid. At the end of September, the EV/EBITDA (LTM) multiple of ARTHOS Vision Technology Peers exceeded 17 compared to 12 one year ago! This happened for the first time in history. Yet, nobody knows for how long valuations will stay that high. However, one thing is certain: multiples won't skyrocket forever.

A few days ago, I was asked what the future M&A-trend in our industry is. In my view the future M&A trend for vision companies already started. For some years now, we have seen that scale became important and that larger vision players like Basler or Point Grey were successfully able to benefit from their size. In other industries we observe that consolidation normally continues by the execution of large M&A transactions in the same area to benefit from scale effects. However differently, in the vision space we see that in most cases companies taken over are complementing the capabilities of the acquirers. This could be observed with many transactions during last year, e.g. when Matrix Vision became part of the Balluff group, Point Grey was acquired by Fliir or when Mobileye was taken over by Intel.

Concluding, the combination of vision with other capabilities often delivers large value for the buyer supporting nice prices. In case you consider a potential sale, you should carefully select your future partner as often it is not the first one you think of.

**Current Relevant M&A and Market News**

- May 15, 2017:** AIRY3D Inc. raised \$3.5m in a seed round co-led by CRCM Ventures and R7 Partners as well as other investors
- May 18, 2017:** Ambienta-backed Lakesight Technologies Holding GmbH acquired Chromasens GmbH
- May 23, 2017:** IPG Photonics Corporation acquired OptiGrate Corp., a volume Bragg grating (VBG) technologies manufacturer
- Jun 1, 2017:** Basler AG acquired mycable GmbH, a manufacturer of embedded processor systems and modules
- Jun 13, 2017:** Based on various newspapers, Hexagon, the Swedish measurement technology and software firm, has held talks on a possible sale to a U.S. or European rival with a possible estimated valuation of \$20 billion
- Jun 22, 2017:** AMETEK, Inc. acquired MOCON, Inc. for \$180m
- Jun 29, 2017:** ASML Holding NV closed the acquisition of 24.9% of Carl Zeiss SMT GmbH for approximately €1 billion
- Jul 3, 2017:** ams AG closed the acquisition of 100% of Princeton Optronics. which supplies high performance VCSELs for \$75 m
- Jul 6, 2017:** Datalogic S.p.A. acquired SOREDI touch systems GmbH for €10 million
- Jul 11, 2017:** IPG Photonics Corp acquired Innovative Laser Technologies Inc. for \$40 million from Generation Growth Cap
- Jul 20, 2017:** GreenTropism S.A.S. received €1.2m in funding from various investors, such as Heptagon Micro Optics Pte Ltd
- Aug 7, 2017:** Bruker Corporation acquired XGLab S.r.l.
- Aug 22, 2017:** Jenoptik AG acquired 100% of Five Lakes Automation
- Aug 30, 2017:** Kapsch TrafficCom AG acquired the remaining 67% stake in Simex IntegraciOn De Sistemas for MXN 43m
- Sep 14, 2017:** Balluff GmbH announced the acquisition of iss innovative software services GmbH

Notable Recent M&A Transactions



**March 6, 2017:** Danaher Corp. agreed to acquire Advanced Vision Technology (AVT) Ltd., a leader in automatic print inspection, process control, quality assurance and color control, for €88.6m. AVT became part of Danaher's Product Identification Platform, is a group of companies which are simplifying the consumer goods and packaging value chains through innovative software and hardware solutions. The transaction was closed 18<sup>th</sup> May.



**Jun - Oct, 2017:** Hexagon Manufacturing Int. acquired FASys Industrie-EDV-Systeme GmbH, a system integration specialist, on 5<sup>th</sup> June. Hexagon PPM entered into an agreement to acquire Dst Computer Services SA, a developer of pipe stress analysis solutions on 13<sup>th</sup> June. Hexagon AB acquired Luciad NV, a visualizer/ analyser of geospatial data, on 4<sup>th</sup> October.



**July 6, 2017:** AL-KO Kober SE, a leading product provider for automotive and aerospace technology and garden products, and the management of STEMMER IMAGING GmbH co-acquired STEMMER IMAGING GmbH, a supplier of industrial imaging technology. AL-KO gains a 75.04% stake and the management acquires the remaining 24.96%.



**August 30, 2017:** OMRON Corp., a producer of factory automation equipment, signed an agreement to acquire Microscan Systems, Inc., a leading global supplier of industrial code readers, from Spectris plc for approximately \$160 million. OMRON seeks to further advance the control of manufacturing equipment and production lines, using IoT to connect virtually all objects on a manufacturing floor. The transaction was closed on 2nd of October 2017.



**August, 2017:** Balluff GmbH, a specialist in sensor and automation technology, acquired 75% stake in MATRIX VISION GmbH, one of the biggest German providers of imaging components, for an undisclosed amount. The transaction aims to strengthen Balluff's market position in the machine vision business.



**September 22, 2017:** Private equity investor Canyon Bridge Capital Partners, Inc. reached an agreement to acquire Imagination Technologies Group plc, a leading UK chipmaker, for approximately \$675 million. As part of the deal, Imagination's US unit MIPS is being sold to Tallwood Capital for \$65million. The transaction is yet to be closed.

Vision Technology Companies' Benchmarking (last twelve months)

	Gross Margin	EBITDA Margin	R&D Margin
	49,2%	17,8%	9,6%
ams AG	45,7%	16,6%	27,1%
Ametek	33,9%	26,0%	n.a.
Basler	49,3%	20,7%	6,6%
Cognex	78,6%	35,4%	14,4%
Datalogic	46,6%	15,8%	8,8%
Electro Sci. Ind.	42,6%	1,5%	17,8%
FARO Techn.	54,2%	4,0%	9,9%
Kapsch TrafficCom	63,0%	10,8%	n.a.
FLIR Systems	46,7%	21,2%	9,1%
Hamamatsu	49,1%	25,8%	9,4%
Hexagon	60,8%	25,2%	11,4%
Isra Vision	56,8%	20,9%	13,8%
Jenoptik	35,2%	13,6%	6,2%
Keyence	80,9%	54,5%	2,7%
Nanometrics	51,3%	17,3%	13,9%
Novanta	43,5%	18,4%	8,0%
Orbotech	46,8%	19,4%	13,8%
Oxford Instr.	52,1%	17,1%	7,8%
Perceptron	35,6%	7,4%	8,8%
Renishaw	53,2%	26,3%	n.a.
Rudolph Techn.	52,4%	19,5%	18,4%
Teledyne Techn.	38,8%	16,4%	n.a.
TKH Group	46,4%	11,7%	n.a.
Viscom	67,4%	17,1%	n.a.