

**Vision Technology Stock Market Performance**

Company Name	EV € mn	Sales € mn	Share price	Local curr.	Δ 52W High	2018E EV/EBITDA
<b>ARTHOS Vision Technology Peers</b>						
ams AG	8.590.2	1.063.8	105.5	EUR	5,8%	16,4x
Ametek	15.240.7	3.581.2	74.5	USD	(5,8%)	16,4x
Basler	572.1	146.4	182.6	EUR	(20,2%)	17,5x
Cognex	7.144.2	622.9	53.0	USD	(27,4%)	30,0x
Datalogic	1.717.5	605.4	28.7	EUR	(17,3%)	16,0x
Electro Sci. Ind.	424.6	253.5	18.1	USD	(34,6%)	5,4x
FARO Techn.	688.9	300.6	59.6	USD	(4,3%)	21,7x
Kapsch TrafficCom	531.5	686.8	43.1	USD	(31,0%)	7,9x
FLIR Systems	5.440.2	1.499.4	48.9	USD	(7,5%)	15,4x
Hamamatsu	4.586.5	996.7	4.205.0	JPY	(2,8%)	15,5x
Hexagon	18.488.8	3.448.4	468.6	SEK	(6,3%)	16,2x
Isra Vision	746.9	143.0	170.6	EUR	(29,9%)	17,1x
Jenoptik	1.477.7	719.0	26.4	EUR	(24,1%)	13,1x
Keyence	52.624.8	3.485.5	62.350.0	JPY	(13,9%)	22,2x
Nanometrics	418.1	215.4	26.6	USD	(18,0%)	8,0x
Novanta	1.734.6	434.1	56.5	USD	(6,3%)	17,3x
Orbotech	1.992.2	750.2	55.8	USD	(2,3%)	10,2x
Oxford Instr.	555.1	395.0	7.9	GBP	(32,9%)	9,0x
Perceptron	63.7	65.3	9.0	USD	(17,1%)	8,0x
Renishaw	3.668.1	650.8	46.0	GBP	(21,0%)	19,1x
Rudolph Techn.	543.9	212.4	26.8	USD	(6,0%)	10,4x
Teledyne Techn.	6.173.2	2.168.4	184.9	USD	(8,2%)	15,9x
TKH Group	2.331.1	1.412.4	49.5	EUR	(16,2%)	11,4x
Viscom	252.4	91.0	29.4	EUR	(25,8%)	15,3x

**Mean** (15.5%) **15,1x**  
**Median** (16.7%) **15,9x**  
 Peer Group includes companies with business focus on Vision Technology; Closing share price as of March 2, 2018; Sales as of published last twelve months.

**Personal Note**

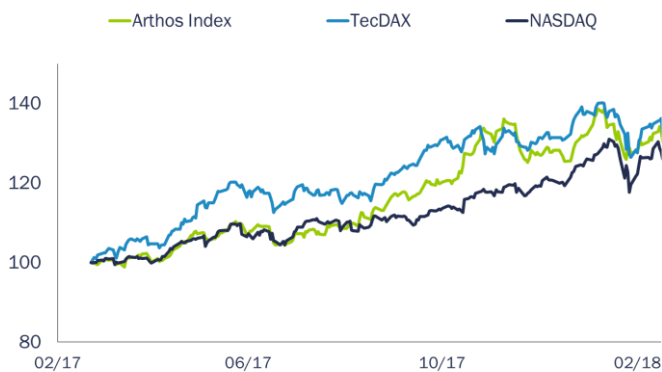


Since beginning of February basically all capital markets settled down a bit, valuations were simply too high. This reaction also impacted the Vision Technology Peers as you can easily recognize on both charts on the left side of this page. Valuations dropped notably but are still on a high level.

Nevertheless, the market environment is still excellent and many professional players use this situation to improve their cash position as long as market conditions are good. Stemmer Imaging e.g. just executed their IPO realizing a capital increase of 51m€ for the company. ams AG is acting on higher levels, they just placed a seven years senior unsecured convertible bond for €600m. In addition, ams plans to replace the earn-out implemented for the acquisition of Heptagon which is a combination of cash and shares with a shares-only consideration only. Hence both companies as well as other publicly listed companies have the firepower needed to finance further acquisitions in this market environment and can due to their own valuation afford high prices when taking over private companies.

In my view stock markets will over the next couple of months move sideways with some ups and downs because business fundamentals are still solid, but I do not expect valuations to increase any more. Considering that there is always the risk that markets are going down, there is not much to win. In a nutshell, this means if one is considering a potential sale of his company, he shouldn't wait too long!

**ARTHOS Vision Technology Index Performance**



ARTHOS Vision Technology Index includes the companies listed above

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

**Nov 30, 2017:** According to MarketResearch.biz the global CMOS camera module market (incl. sensor and lens) is - with a CAGR of 16.4% - projected to reach \$66 Billion by 2026.

**Nov 8, 2017:** Endress+Hauser acquired Blue Ocean Nova who develops and manufactures fiber optic inline process sensors.

**Nov 9, 2017:** apple acquired InVisage Technologies, a fabless company that develops QuantumFilm based image sensors.

**Oct 2, 2017:** Continental AG announced that Advanced Imaging Technologies (Pty) Ltd was recently acquired.

**Oct 4, 2017:** Trumpf acquired 85% stake in Access Laser.

**Nov 13, 2017:** ams and Ningbo Sunny Opotech entered a collaboration to develop and Market 3D Sensing Camera Solutions for Mobile Device and Automotive Applications.

**Dec 1, 2017:** Lakesight Technologies has appointed Peter Tix as CEO. He formerly acted as Head of a Division at Heidelberger Druckmaschinen AG.

**Dec 26, 2017:** Polatechno Co.,Ltd. acquired RaySpec Ltd. to enhance its X-ray business.

**Jan 9, 2018:** TRUMPF acquired AMPHOS GmbH.

**Jan 26, 2018:** Isra Vision AG acquired Polymetric GmbH. The consideration includes an earn-out component.

**Jan 31, 2018:** STEMMER IMAGING GmbH acquired Data Vision from Batenburg Mechatronik B.V..

**Feb 20, 2018:** ams, X-Rite Inc. and Pantone LLC announced a collaboration to develop a solution that embeds colour management technology directly into a smartphone for accurate colour matching.

**Feb 22, 2018:** Bruker announced the acquisition of IRM<sup>2</sup>, a developer of high-speed infrared (IR) imaging microscopes based on quantum cascade laser (QCL) technology.

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



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

Notable Recent M&A Transactions



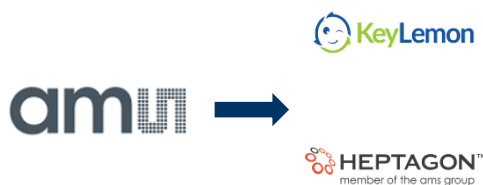
**October 11, 2017:** CMR GmbH (CMR), an Austrian PE firm, acquired Rofin-Sinar UK (RSUK) from Coherent, Inc.. RSUK is based in Hull, England and is home to the low power carbon dioxide (CO2) laser operations which had been held separate by Coherent pursuant to commitments made to the EC. In parallel, CMR announced a joint worldwide sales and production agreement between RSUK and Iradion Lasers Inc. to combine the two companies' product lines and to market them globally.



**December 1, 2017:** Rockwell Automation Inc. acquired Odos Imaging Ltd. a Scottish technology company that provides three-dimensional, time-of-flight sensing systems for industrial imaging applications. Rockwell Automation will apply this technology to sensing products to deliver solutions to a broad range of demanding industrial applications including automotive, packaging and material handling, and logistics.



**February 1, 2018:** Motorola entered into an agreement to acquire Avigilon Corp. for CAD 1.2 billion. Motorola will pay CAD 27 in cash for each share of Avigilon representing ~21 x LTM EBITDA. Avigilon designs, manufactures and markets video surveillance software and equipment and was founded in 2004 by Alexander Fernandes, who will retire as CEO and Chairman of the board after closing.



**February, 2018: Feb 6:** ams AG reported 2017 results with 4<sup>th</sup> Q revenues up 252% and operating result up 683% year-on-year; several large vision sensing design-wins; the acquisition of face recognition software company KeyLemon for 3D sensing; expected revenue growth 2016-19 at 60% CAGR, strong revenue growth expected in 2<sup>nd</sup> half 2018; evaluating secondary listing in Hong Kong and preparation of a private placement of a 7-year senior unsecured convertible bond for €600m, which was placed on Feb 26. **Feb 20:** ams proposed a revised earn-out structure for former Heptagon shareholders. The revised earn-out structure shall replace the combination of cash and shares with a shares-only consideration and is contingent on a threshold of 60% of preferred Heptagon shares.



**February 27, 2017:** Stemmer Imaging AG has completed an IPO in the amount of €101.7m of which 51m€ were contributed as a capital increase into the company. Such funds shall be used for further growth via acquisitions and organic measures. Shares traded at 36€ (7% above the offering price of 34€). SI-Holding (controlled by the Cancom founder Kober and Weinmann) still holds 54% in Stemmer Imaging.

Vision Technology Companies' Benchmarking (last twelve months)

	Gross Margin	EBITDA Margin	R&D Margin
	49,9%	19,6%	9,6%
ams AG	38,5%	16,6%	20,1%
Ametek	34,1%	25,7%	n.a.
Basler	50,1%	23,2%	6,6%
Cognex	77,8%	37,8%	13,2%
Datalogic	46,8%	16,4%	8,9%
Electro Sci. Ind.	46,8%	1,5%	11,1%
FARO Techn.	55,2%	4,6%	9,9%
Kapsch TrafficCom	63,1%	11,2%	n.a.
FLIR Systems	46,9%	21,1%	9,3%
Hamamatsu	49,7%	25,2%	9,0%
Hexagon	61,5%	29,2%	11,3%
Isra Vision	56,6%	20,0%	14,2%
Jenoptik	35,3%	14,1%	6,2%
Keyence	80,9%	54,5%	2,7%
Nanometrics	53,1%	19,4%	14,2%
Novanta	43,5%	19,0%	8,0%
Orbotech	47,1%	19,9%	13,7%
Oxford Instr.	51,7%	16,9%	7,8%
Perceptron	36,8%	8,2%	9,0%
Renishaw	54,2%	28,5%	n.a.
Rudolph Techn.	52,8%	20,5%	18,4%
Teledyne Techn.	38,3%	18,1%	n.a.
TKH Group	46,4%	11,7%	n.a.
Viscom	66,9%	18,1%	n.a.