



# IAS moves from side stage to hotspot for investors

SPOT ON | INTEGRATED ASSEMBLY SOLUTIONS | MARCH 2019

“Well established in automotive production, integrated assembly and testing lines are becoming increasingly important success factors in more and more industries. They will be powerful generators of data for key IIoT applications.”

**MARTIN STEIDLE**

OAKLINS INTEGRATED ASSEMBLY  
SOLUTIONS SPECIALIST

## **MARKET TRENDS (pg.2)**

The IAS sector has recently been drawing the attention of strategic and financial investors alike. What makes this market so attractive?

## **PLAYERS AND M&A ACTIVITY (pg.5)**

The last few years have been record years for general M&A activities. How did the IAS sector behave in this regard?

## **M&A RATIONALES AND VALUATIONS (pg.10)**

Four major rationales drive M&A in the IAS sector. What valuations can be expected?

## **KEY FINDINGS AND OUTLOOK (pg.12)**

Diverse factors have been boosting M&A activity for the past few years. How are these changes going to affect the sector?



## **MARKET TRENDS**

Over the last few years, the term "Industry 4.0" has become a popular buzzword that refers to the Fourth Industrial Revolution.

(CONTINUED ON NEXT PAGE)



## Market trends

Over the last few years, the term "Industry 4.0" has become a popular buzzword that refers to the Fourth Industrial Revolution.

Along with this concept a plethora of self-dynamics has emerged, whose parallel evolution has contributed to the improvement of process efficiency through the implementation of digitization and digitalization at every stage of the value chain. Many people believe industrial automation systems to be a brand-new trend sparked up by Industry 4.0, but that is an inaccurate assumption. Automation was—besides General IT topics—the core element of the Third Industrial Revolution that began in the late 1960s and early 1970s. This revolution had a particularly deep impact on the Industrial Machinery & Components industry (IM&C) and its niche sector, Integrated Assembly

Solutions (IAS). IAS comprises automated manufacturing solutions that solve key operational tasks for manufacturers. The solutions are commonly modular and enable automated assembling, handling, testing, measuring and complementary tasks, as well as further services, in a variety of industries. Nowadays, these systems are already highly developed, combining different production steps into a seamless process. IAS shifts the focus away from competitive labor costs towards fully automated, highly efficient and virtually error-free manufacturing systems with high throughput speed, based on advanced and complex automation solutions. On top of this, Industry 4.0 generates multiple optimization potentials, effectively boosting the attractiveness of IAS for industries already using it as well as for new industries. And so we see the birth of cyber-physical systems

### WHICH INDUSTRIES BENEFIT FROM IAS?

The highly versatile IAS find applications in various industries, since every manufacturing company can potentially have points of contact with this specialized sector. One of the very first, and still the largest, customer industries for IAS is automotive. Industries such as general manufacturing, medtech and electronics, among others, also provide ample application opportunities. IAS also allow the automated manufacturing of highly complex components. Possible applications range from different types of assembling (e.g., material handling, processing, welding) to production-related quality assurance (e.g., in-process inspection, testing applications). Overall, IAS lift the efficiency of manufacturing up to the next level. The versatility of IAS caters for the advanced requirements of today's customers.



**WHAT DRIVES THE IAS MARKET?**

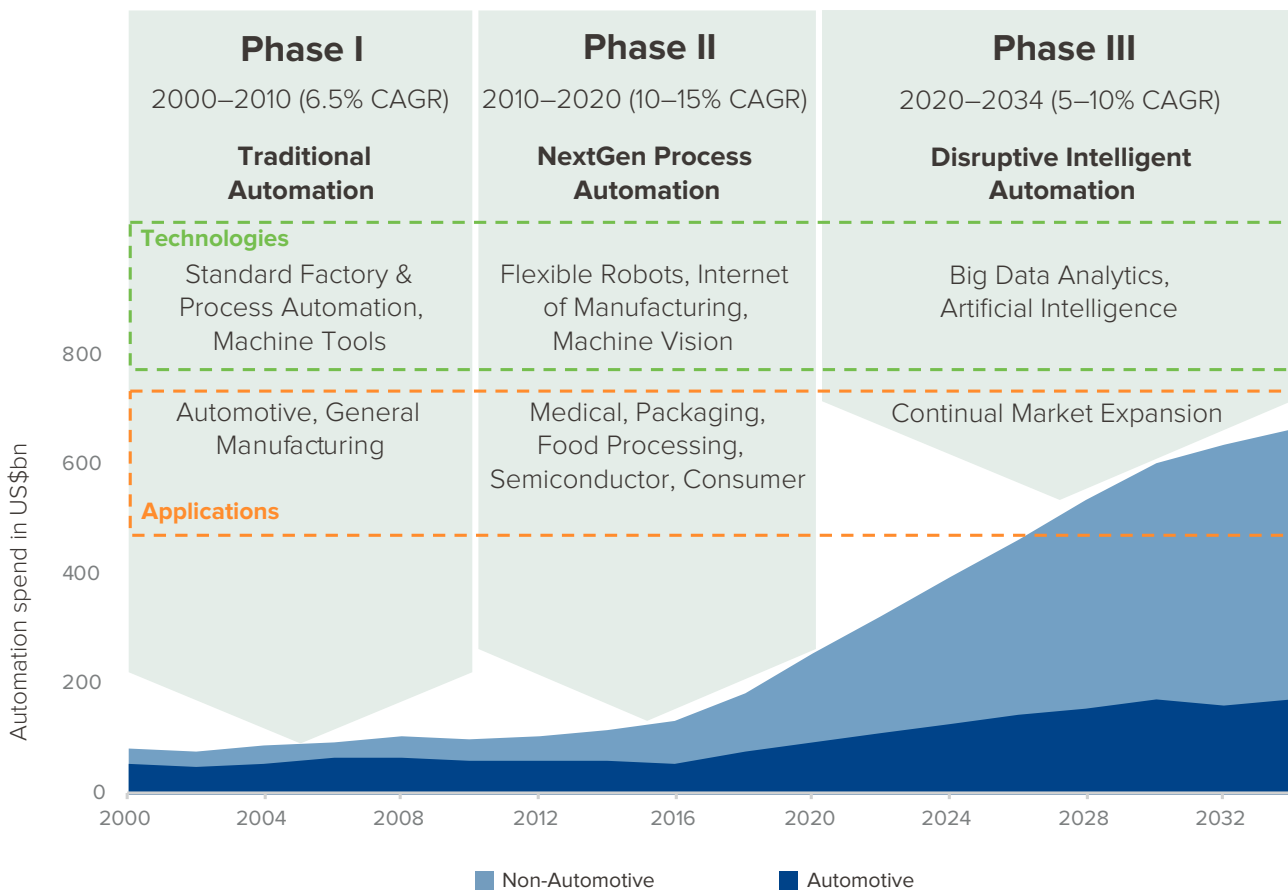
In recent years, cost reductions and performance improvements in computing power, storage and bandwidth, also known as “core digital technologies,” paved the way for a ramped-up technological innovation cycle. Based on these latest technological developments, one can identify fundamental trends driving the IAS market. New technologies and digitalization—in particular the interconnectivity of machines—have been, and will continue to be, crucial growth drivers for IAS. Due to the interconnectivity and smartness of devices—the Industrial Internet of Things (IIoT)—valuable data about each step of the production process can be generated, collected and analyzed, in order to further optimize the manufacturing process.

This data is the basis for the application of Artificial Intelligence to generate improvements through deep learning. The quest for operational efficiency is another major trend. Shrinking margins necessitate the optimization of operating costs, reduction of errors and wastage, and synchronization of processes. Additionally, mass customization allows further differentiation. Flexible and scalable production and assembly systems are near-mandatory requirements in mature markets today. Finally and importantly, globalization is also a driving force for the IAS market. Although it intensifies competition within the sector, globalization grants access to new customer markets and industries. Industrialization, and the associated wage increases in emerging markets, further fuel this effect.

**WHAT ARE THE OPPORTUNITIES IN THE IAS MARKET?**

The well-established IAS sector is part of the broader automation market, which has been growing at an average annual rate of 6.5% since the early 2000s. The main drivers were standard factory and process automation. For the IAS segment, the automotive industry was the predominant customer industry.

The development of the automation market between 2000 and 2034e



Source: International Federation of Robotics, Markets and Markets

## Market trends

Around 2010, further pioneering technologies—like, for instance, IIoT and flexible robotics—were introduced and affected the IAS sector directly by enabling the automation of increasingly more complex processes. Since then, the range of IAS customer industries has gradually been widening, resulting in an increase in overall sales. Medical, packaging, food processing, semiconductor, renewables and consumer goods are exemplary industries that particularly benefit from IAS.

The gradually decreasing reliance on the automotive industry coincided with an increasing interest in IAS from global strategic and financial investors. Since 2014, M&A activity has accelerated significantly (see page 6). This development is traceable to the rising interest of investors in Industry 4.0.

The next phase of disruptive and intelligent automation is about to start, with expected annual growth rates of 10-15% per annum. Major growth drivers are Big Data Analytics and Artificial Intelligence, which are leading to further expansion of automation across all industries. Analysts forecast that, within the next 10 years, automation spending will rise to US\$600bn—an amount three times that of today.

**The increase in total market volume provides the IAS sector with ample growth opportunities and underlines its attractiveness for investors.**

---



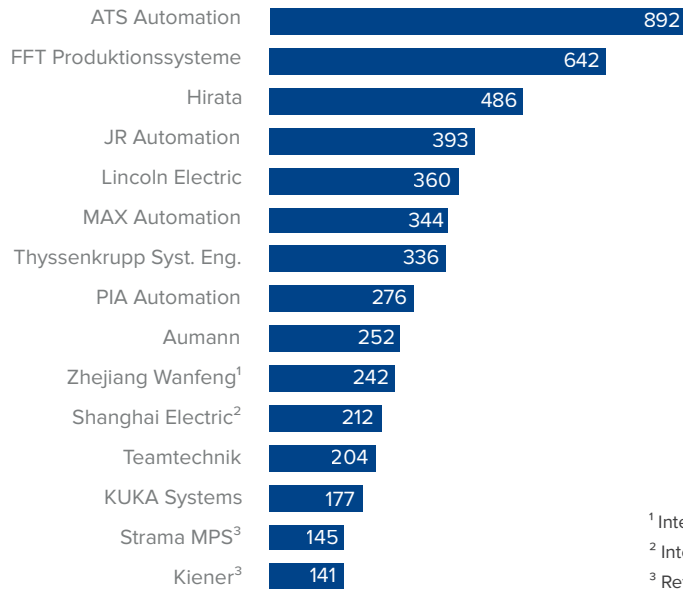
# Players and M&A activity

## MOST RECENT RANKING OF IAS PLAYERS

As of today, the IAS market is fragmented and primarily consists of small and medium-sized enterprises (SMEs). IAS companies with total sales in excess of US\$25m and/or with more than 100 employees are scattered across the globe. Despite this global distribution, over 50% of these IAS players are located in Europe and an additional 25% in North America, while the remaining companies are located in Asia-Pacific and the Middle East.

This graph shows a ranking by total sales in US\$ of the top 15 IAS companies worldwide, based on fiscal year 2017. We also analyzed the companies in terms of international footprint and industry diversification.

Top 15 IAS players by revenue in US\$m (2017)

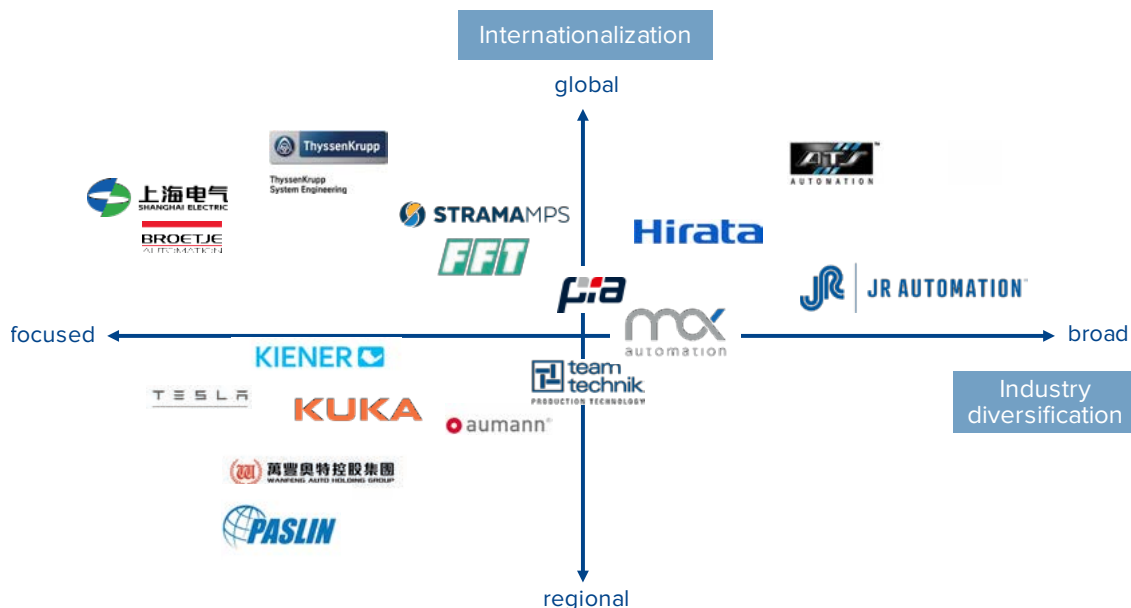


<sup>1</sup> Interest in Paslin  
<sup>2</sup> Interest in Broetje  
<sup>3</sup> Revenues 2016

Source: Oaklins research, Xpertgate

So far, IAS has not been the core focus of large North American or European global groups (i.e. not a core business for ThyssenKrupp, ranked #7). The largest player in terms of total sales is publicly listed Canadian company ATS Automation. With total sales of US\$892m, it is the most diversified and international player among all IAS companies. The second largest player, the German company FFT Produktionssysteme, is less global and has a more focused industry approach.

## Indicative positioning of IAS players in terms of internationalization and industry diversification



Source: Oaklins research

## Players and M&A activity

### OVERVIEW OF M&A ACTIVITY

We have analyzed relevant IAS transactions since 2008. With only 11 transactions, M&A activity in the IAS sector was rather lackluster until 2013.

During the first six years, a few private equity investors and family offices—such as, for instance, Günther Holding, MBB SE, and Deutsche Beteiligungs AG—pioneered the IAS market. In 2014 however, the situation changed, as M&A activity soared to 10 transactions and grew almost steadily afterwards, peaking in 2018 with a record of 17 transactions worldwide.

One important reason for the jump in M&A transactions is Industry 4.0, drawing investors' attention to the automation industry in general, which also includes IAS. Further financial investors became attracted by the growth potential and fragmented market structure of the IAS sector, which is

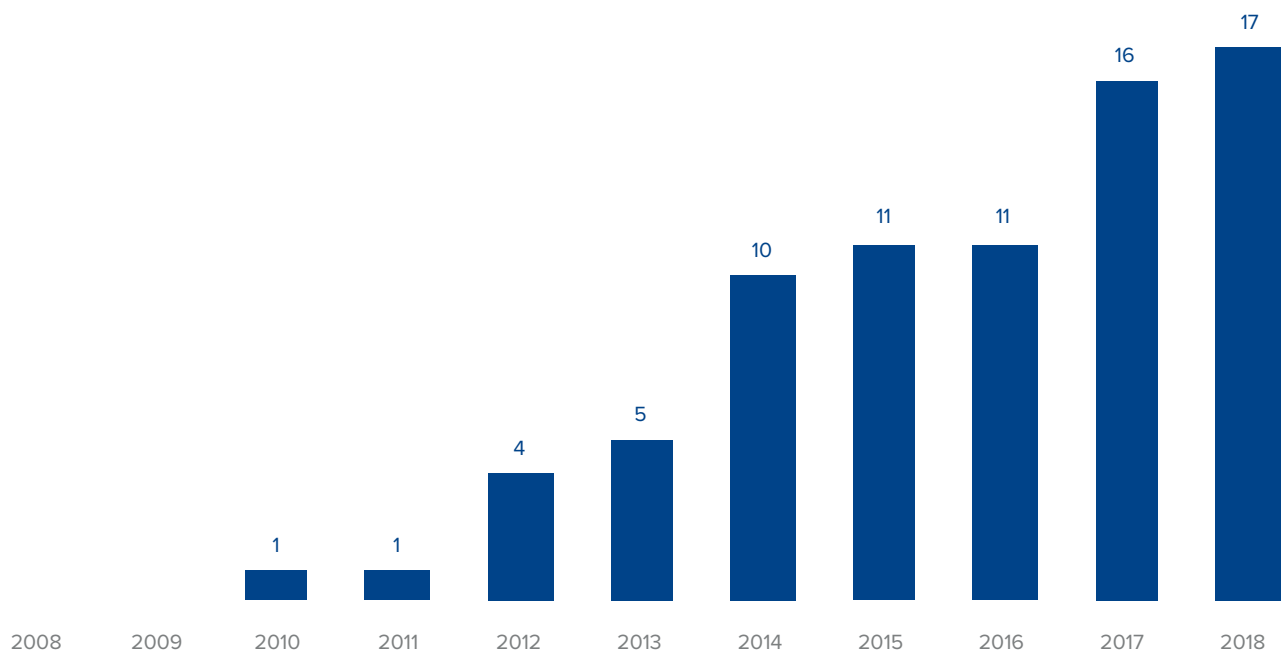
suitable for buy-and-build. The origins and geographical locations of said investors are diverse. However, these investors are primarily located in IAS hubs, among which the most notable are in the USA and Germany (e.g. Crestview Partners in the USA, RAG-Stiftung Beteiligungsgesellschaft and Quadriga Capital in Germany).

Another major M&A driver is China, with its 2015-released “Made in China 2025” (MIC 2025) governmental program. In this context, China aims at gaining a leadership position within various industries, such as industrial automation, information technology and clean energy. As a consequence, numerous Chinese strategic investors—such as, for instance, Ningbo Joyson Electronic Corp. (Joyson) and Shanghai Electric—have been among the most active players in the IAS M&A market in recent years.

Overall, the most active player was Lincoln Electric, completing eight transactions, followed by Crestview (backing JR Automation) with four transactions, the German RAG-Stiftung Beteiligungsgesellschaft (backing Hahn Automation), and ATS Automation, both completing three relevant transactions.

**An analysis of the investors' country of origin shows that between 2013 and 2018 Germany was the most active with 26 closed relevant transactions, followed by China with 21 and North America with 17.**

### Total IAS transactions 2008–2018



Source: Oaklins research, Mergermarket



**GLOBAL M&A MOVEMENTS**

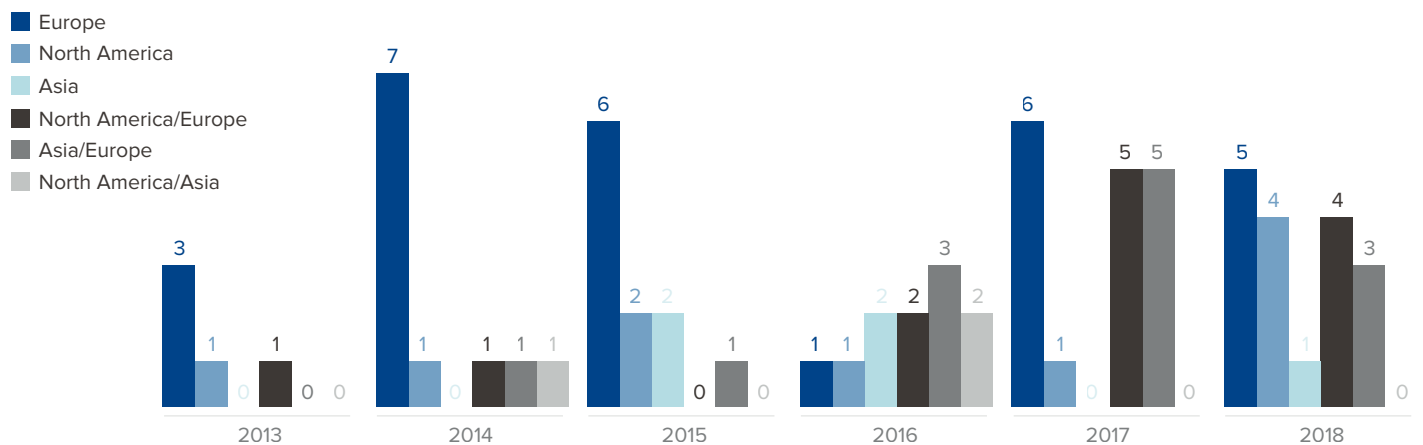
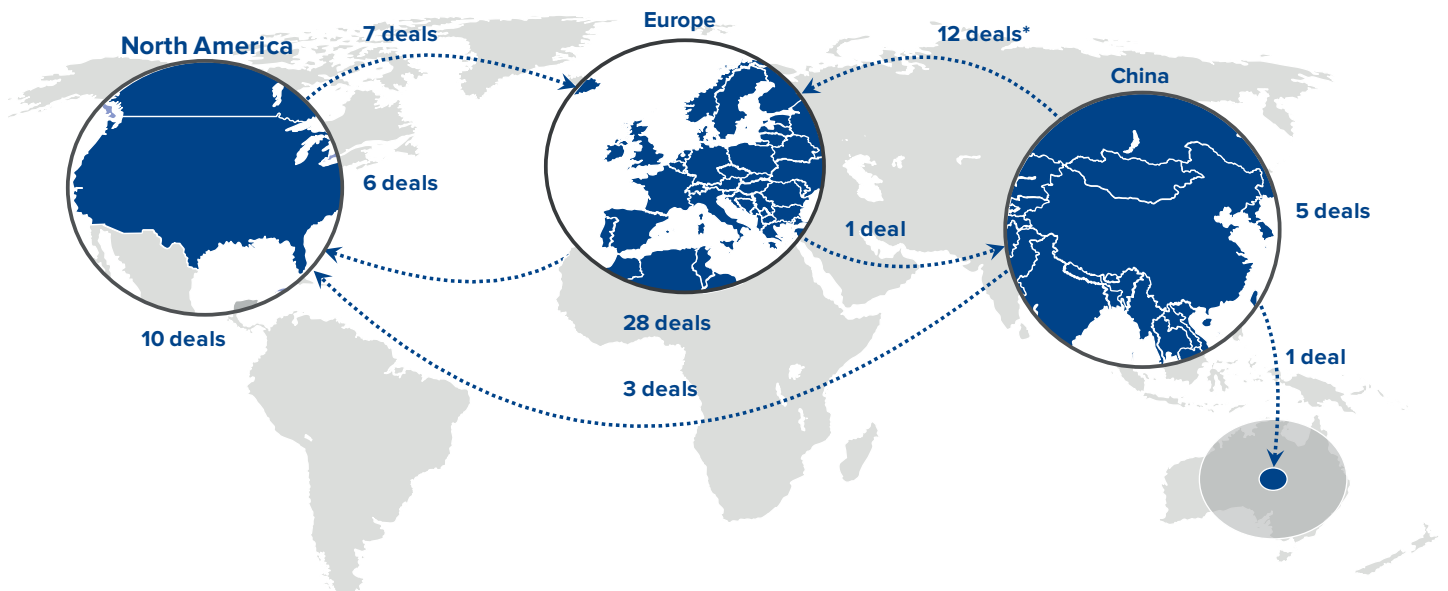
Our analysis also provides insights into the geographical directions of the most relevant M&A transactions since 2013.

Cross-border transactions—and especially intercontinental transactions—have grown significantly during the period under consideration (2013–2018).

Between 2013 and 2015, more than 70% of the transactions were executed nationally. When adding transactions between directly adjacent countries, this percentage rises to nearly 90%. After 2015 however, the dynamic changed. Between 2016 and 2018, the majority of IAS transactions were intercontinental

(over 60%). The analysis also shows that China was heavily involved in outbound M&A with North America and Europe, but that the flow of capital was almost exclusively unilateral.

**Global M&A flow within the IAS sector, 2013–2018**



\*Three counted twice: Chinese together with German Investor

Source: Oaklins research, Mergermarket

## Players and M&A activity

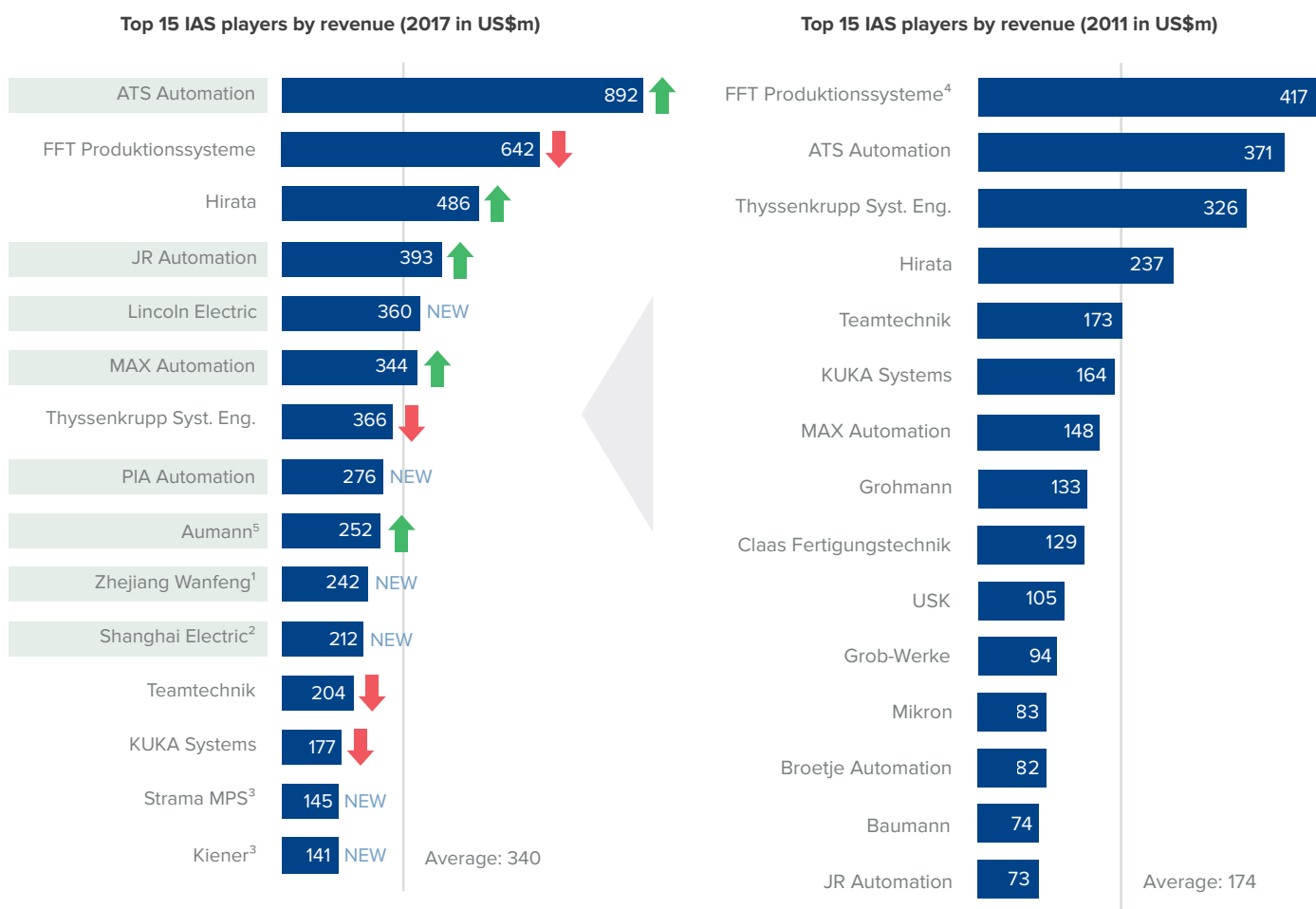
### (HOW) HAS M&A SHAPED THE SECTOR?

Comparing the top 15 IAS players of 2011 with those of 2017 allows for a deeper insight into changes that occurred within the market.

Between 2011 and 2017, the top 15 companies in the IAS sector grew substantially: the average total sales per company almost doubled, rising from

US\$174m to US\$340m, the equivalent of an annual growth rate of more than 12% p.a. However, the IAS market remains very fragmented.

### Changes in top 15 ranking, 2011–2017



■ Significant M&A activity <sup>1</sup> Interest in Paslin <sup>2</sup> Interest in Broetje <sup>3</sup> Revenues 2016 <sup>4</sup> Revenues 2012 <sup>5</sup> Claas Fertigungstechnik (2011)

Source: Oaklins research, Xpertgate

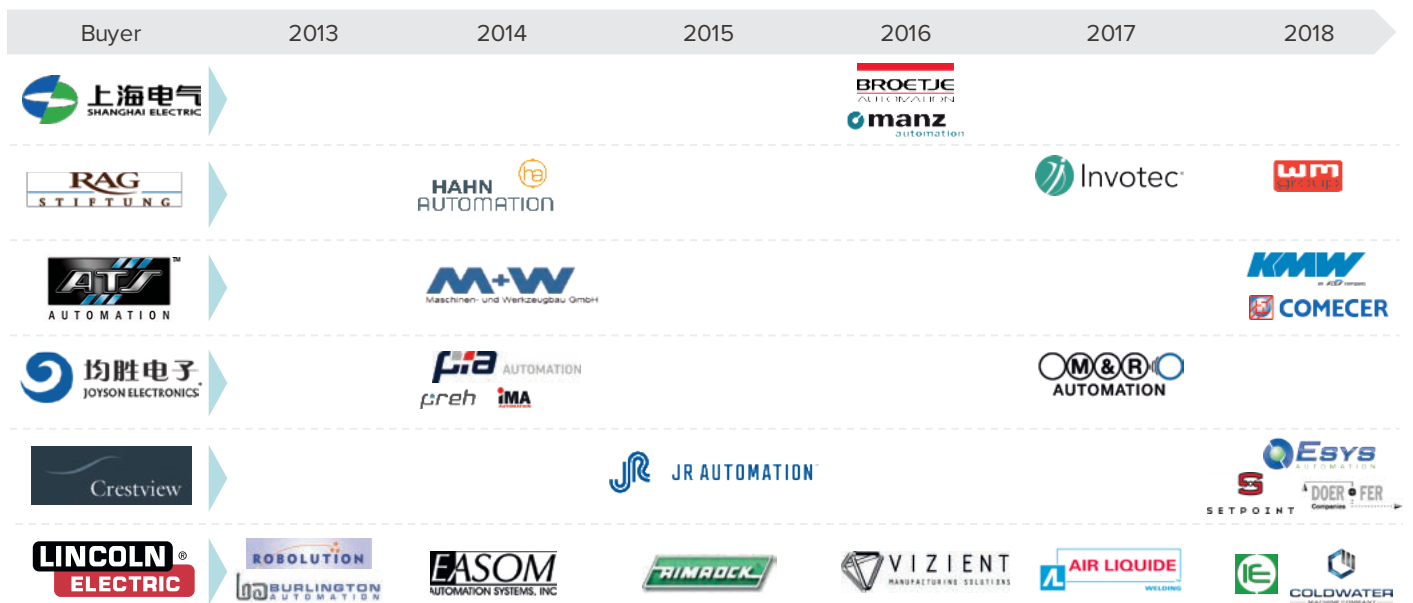


Changes in the ranking are primarily due to M&A activity. With the exception of the Japanese company Hirata, which has been growing organically so far, all the players improving their position in the ranking (green arrows) did so by engaging in M&A. Such consolidators are either publicly listed

(Lincoln Electric, ATS Automation, Shanghai Electric), backed by private equity firms (JR Automation) or a combination of both; that is, publicly listed with a dominant anchor shareholder (MAX Automation with Günther Holding, and Aumann with MBB SE). Institutional capital enabled

JR Automation, for instance, to multiply its total sales by six during the period under consideration, and its current run rate might already have surpassed the US\$500m threshold. The graph below gives an overview of the acquisition path of some of the most active M&A protagonists.

**Selected acquisition history of the most active consolidators since 2013**



\*Joyson acquired Preh GmbH between 2011 and 2012; in 2014 IMA Automation Amberg GmbH was acquired.

Source: Oaklins research, Mergermarket

A number of players are newcomers to the top 15 (see page 8): Lincoln Electric, PIA Automation, Aumann, Zhejiang Wanfeng, Shanghai Electric, Strama-MPS and Kiener. Lincoln Electric, PIA Automation and Zhejiang Wanfeng achieved their top 15 positions primarily through M&A. All three companies have access to the capital market, as PIA Automation is part of publicly listed Joyson, and Lincoln Electric and Zhejiang Wanfeng are publicly listed themselves.

The incumbent players (see page 8, red arrows) who lost ground do not have a significant track record in M&A for diverse reasons; for instance, because IAS did not use to be part of their core business focus or because they pursue primarily organic growth strategies.

It is noteworthy that Chinese companies that had not been active in the sector previously, and have made their entry only recently, today control one

third of the top 15 IAS players: FFT Produktionsysteme (held by Fosun), PIA Automation (Joyson), Zhejiang Wanfeng, Shanghai Electric and KUKA Systems (Midea). The establishment of a significant presence in IAS in such a short period of time is an impressive example of how China is implementing MIC 2025.

# M&A rationales and valuations

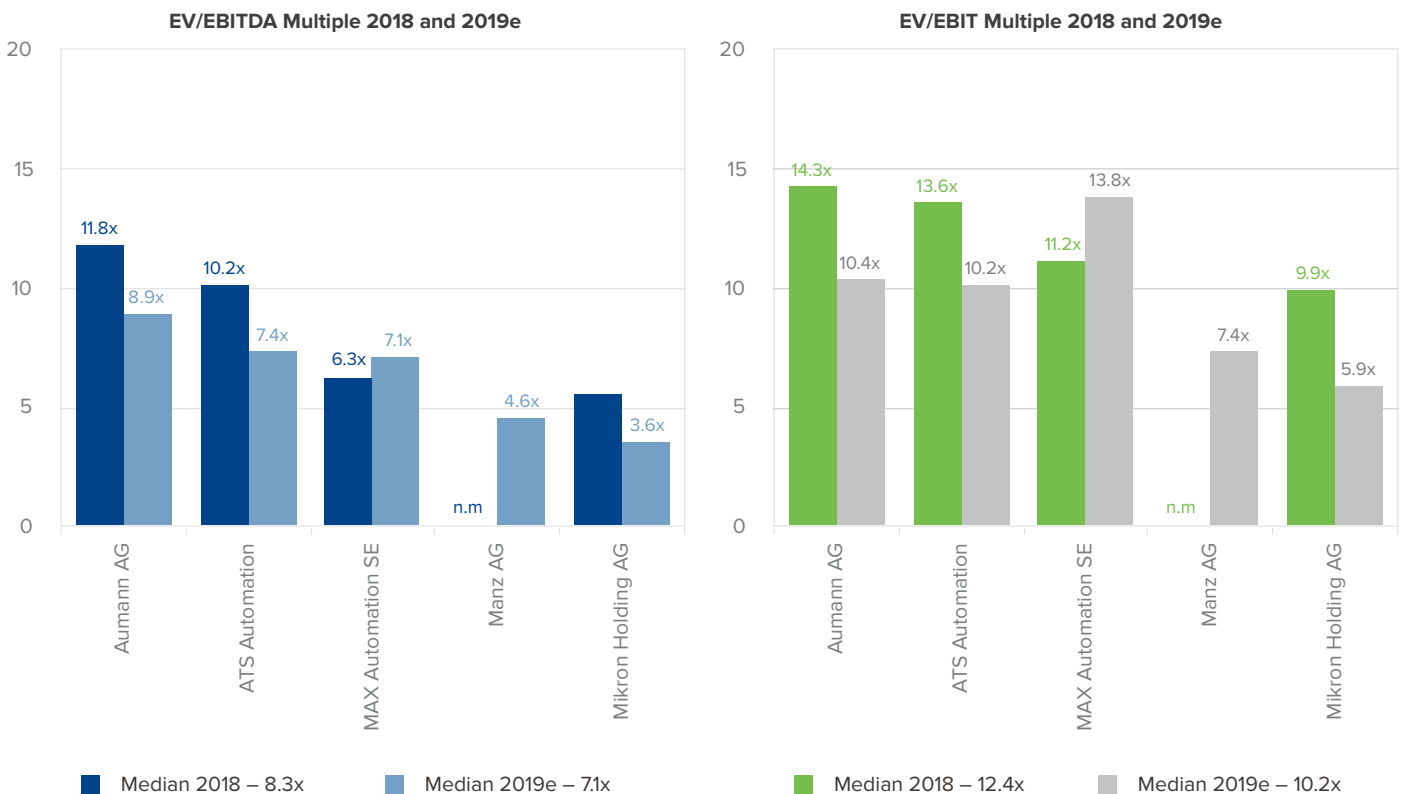
## M&A ACTIVITY RATIONALES

In general, there are diverse reasons for M&A. Our analysis identified four major rationales for transactions within the IAS sector. The first is technology portfolio expansion. Companies expand their existing solutions portfolio with complementary technologies, increasing the product range and improving the system competence. Since 2013, 55% of the analyzed transactions within IAS can be traced back to this rationale, which is the most frequent one. The second most important rationale is the chance to enter new markets and, as a consequence, tap new growth opportunities. Among all analyzed transactions, 52% can be traced back to this rationale. In this context, companies

try to benefit from growing markets and economies of scale to maintain or establish a leading position within the industry. The third most common rationale, behind 31% of the analyzed transactions, is internationalization and globalization. Companies push their global growth to strengthen their market position and establish operations in the USA, Europe and Asia. More and more customers demand local production capacities that require an increasingly global presence. The fourth most relevant rationale behind M&A transactions within the IAS industry is the expansion of customer industries. The idea behind this rationale, stated in 21% of all transactions, is to diversify

the client base and shift away from industries with potentially lower growth. From our experience, this strategic rationale is even more important than shown by the sheer numbers. Numerous IAS players make efforts, for instance, to reduce their exposure to the automotive industry in general and the internal combustion engine in particular. One further strategic reason for acquisitions in mature markets has been the expansion of capacities in recent years, as the scarcity of talent was an important growth constraint. However, this rationale is not usually stated in official press releases.

## IAS peer group valuation 2018 and 2019e



Source: Capital IQ, valuations as of February 13 2019

**VALUATIONS**

The peer group of listed companies in the IAS sector is rather limited. We selected five players from Europe and North America. Due to their high diversification and differing valuation metrics, we chose to exclude Asian players.

Our peer group players are ATS Automation Tooling Systems Inc. (Canada), Aumann AG (Germany), Max Automation SE (Germany), Manz AG (Germany) and Mikron Holding AG (Switzerland). All of them are active in IAS, but with different strategic focuses.

The range of multiples is quite large. Comparing the 2019 EBITDA multiples for these five companies shows that Aumann has the highest multiple (8.9x EBITDA) and Mikron the lowest (3.6x EBITDA), which demonstrates a huge gap of almost 150% between the lower and upper end.

A closer look at the peers reveals some potential reasons for valuation differences. Both of the companies with the highest multiples, Aumann and ATS Automation, are pure IAS providers, whereas the other three players also have other significant activities—like, for instance, machine tools (Mikron) or environmental technology (MAX Automation). Further differentiating value drivers of ATS Automation are certainly size, global footprint and diversified customer industries.

Aumann is market leader in the e-mobility sector and benefits from the market dynamics in this high-growth segment. Other customer industries with attractive growth rates are the pharmaceutical industry or medtech. In contrast, a high exposure to the traditional automotive segments, in particular to the internal combustion engine, is increasingly considered problematic by investors—leading to a valuation discount.

As a consequence, any valuation based on average or median multiples has only limited significance and needs thorough validation based on underlying value drivers.



“Despite recent share price volatility of IAS peers, we still see very attractive valuations in privately negotiated transactions, if a competitive sales process is run on a worldwide basis. Global access to prime investors is key.”

**MARTIN STEIDLE**  
OAKLINS INTEGRATED  
ASSEMBLY SOLUTIONS  
SPECIALIST





## Key findings and outlook

M&A transactions have changed the landscape in the IAS sector considerably since 2014. Also, due to Industry 4.0 and the fragmented market structure encouraging buy-and-build, private equity identified IAS as an attractive investment field. At the same time, Chinese investors entered the international M&A arena following the guidelines of the MIC 2025 political program.

It is of no surprise that the most active investors either have access to the capital markets and/or private equity backing. This also holds true for Chinese investors who, as of today, account for five of the top 15 players, after being completely absent from the ranking only a few years back.

**We expect a further increase in M&A activity in the IAS sector.**

Private equity will continue to consolidate the market and support the formation of larger entities, with more diverse customer industries and operations that are truly global in scale. Examples include Hahn Automation, backed by RAG-Stiftung Beteiligungsgesellschaft, and BBS Automation, backed by EQT. If a top 15 ranking was to be made as of today, Hahn Automation would already be part of it. Both Hahn and BBS are platform investments for their private equity owners. The same is true for JR Automation. The creation of ATS Automation might be a blueprint for private equity activities in the IAS sector in the years to come.

Besides private equity, we also expect a continued and strong interest from Chinese investors, especially in European opportunities. Given the existing tensions between North America and China,

Chinese investors would presumably refrain from investment opportunities in the USA for the time being.

The formation of global entities will ultimately change the dynamics within the IAS sector, which was formerly dominated by SMEs. In particular, large international customers will appreciate the global setup and the comprehensive technology portfolio of the leading IAS players, making life increasingly difficult for smaller competitors. Those usually privately held SMEs will have to find new strategies to make up for their structural disadvantages. One way could be to explore strategic options in order to benefit from the currently very favorable and active M&A market in the sector.

# Our expertise in your industry

## Jenoptik AG acquired Prodomax Automation Ltd., July 2018

Prodomax is one of the leading providers of complete automation solutions to the North American automotive industry. In its fiscal year 2017, Prodomax revenue was approximately US\$50m—with higher profitability than Jenoptik. Prodomax will be fully integrated in Jenoptik’s North American laser and automation operations.

Oaklins successfully positioned Jenoptik in a one-on-one situation with a financial sponsor.

## Aumann AG acquired USK Karl Utz Sondermaschinen GmbH, October 2017

USK is an automation solutions specialist for leading automobile manufacturers and Tier-1 suppliers. The core arguments for Aumann were mainly the customer structure and USK engineers' expertise.

Oaklins helped Aumann complete the disposal in record time. Based on an exclusive fast-track process, the deal was signed within approximately eight weeks.

## Jenoptik AG acquired Five Lakes Automation LLC, August 2017

Five Lakes Automation is broadly experienced in handling individual machines and the integration of full production systems in automated process lines. The core argument for the acquisition was the establishment of stronger positioning in the area of Industry 4.0.

Oaklins’ deep local industry expertise served as a key success factor in helping Jenoptik to acquire Five Lakes Automation.

JENOPTIK  
has acquired  
PRODOMAX  
AUTOMATION LTD.  
from  
KENSINGTON  
M&A BUY-SIDE  
Automotive/Industrial Machinery & Components/Private Equity

USK  
ZUKUNFT AUTOMATISCH  
has been sold to  
aumann  
M&A SELL-SIDE  
Industrial Machinery & Components

JENOPTIK  
has acquired  
FIVE LAKES  
AUTOMATION  
M&A BUY-SIDE  
Automotive/Industrial Machinery & Components

# Selected transactions

## Netherlands



bos machines bv  
speciaal-machines voor de houtindustrie

has been acquired by



anders  
invest

M&A SELL-SIDE

---

Industrial Machinery & Components/Private Equity

## Switzerland/China



Hocoma

has merged with



DIH 蝶和医疗  
Transform to Lead · Inspire to Win

ADVISOR TO HOCOMA

---

Healthcare

## Spain/China



ARITEX

has been acquired by



AVIC INTL

M&A SELL-SIDE

---

Aerospace & Defense

## USA/Japan



AVTRON  
INDUSTRIAL  
AUTOMATION

has been acquired by




Nidec

M&A SELL-SIDE

---


Industrial Machinery & Components/Other Industries/Private Equity

## USA



WAYNETRAIL  
TECHNOLOGIES, INC.

has been acquired by




LINCOLN  
ELECTRIC

M&A SELL-SIDE

---


Business Support Services/Industrial Machinery & Components

## USA/France



BRONX  
INTERNATIONAL

has been acquired by



fives

M&A SELL-SIDE

---

Construction & Engineering Services



# Deep local roots, global commitment

Oaklins brings you opportunities from across the world and we meet you with our expertise wherever you are

## OAKLINS OFFERS A COMPREHENSIVE RANGE OF SERVICES

- M&A advisory (buy-side and sell-side)
- Growth equity and equity capital markets advisory
- Debt advisory
- Corporate finance services

IAS is one of our focus areas. Combining comprehensive sector knowledge with global execution has led Oaklins to become one of the most experienced M&A advisors in the IAS sector, with a large network of relevant market players worldwide. This results in the best possible merger, acquisition and divestment opportunities for IAS companies.

If mergers, acquisitions, or divestitures of businesses or business units are part of your strategy, we would welcome the opportunity to exchange ideas with you.

## OAKLINS IAS SPECIALISTS



### AUTHOR

✉ **MARTIN STEIDLE**  
Director  
Stuttgart, Germany  
T: +49 151 14312291



✉ **MATHEW MUELLER**  
Director  
Cleveland, United States  
T: +1 216-574-2103



✉ **JEREMY JIN**  
Director  
Shanghai, China  
T: +86 21 5012 0990

Oaklins is the world's most experienced mid-market M&A advisor, with 800 professionals globally and dedicated industry teams in 40 countries worldwide. We have closed over 1,500 transactions in the past five years.

## **Oaklins disclaimer**

This report is provided for information purposes only. Oaklins and its member firms make no guarantee, representation or warranty of any kind regarding the timeliness, accuracy or completeness of its content. This report is not intended to convey investment advice or solicit investments of any kind whatsoever. No investment decisions should be taken based on the contents and views expressed herein. Oaklins and its member firms shall not be responsible for any loss sustained by any person who relies on this publication.

© 2019 Oaklins. All rights reserved.

Oaklins is the collective trade name of independent member firms affiliated with Oaklins International Inc. For details of the nature of affiliation please refer to [www.oaklins.com/legal](http://www.oaklins.com/legal).