Oaklins

Smart tech revolution supports **an energy-efficient vision**

SPOT ON | HVAC | APRIL 2019

"The original equipment manufacturers (OEMs) in the market are investing in the launch of new and innovative products in order to increase the efficiency level of HVAC systems.

In this newsletter we explore this trend towards smarter and highly efficient systems and look into the future to find out which innovations will revolutionize the market."

PHILIP BARKER
OAKLINS HVAC SPECIALIST

MARKET TRENDS

Innovative technologies are taking the world by storm. As high-tech gadgets and smartphone innovations continue to penetrate and shape the heating, ventilation and air-conditioning (HVAC) market, it is inevitable that we will see an increasing demand for smarter systems that will fundamentally change how we heat and cool our homes.

(CONTINUED ON NEXT PAGE)

Market trends

REVOLUTIONARY HVAC TECHNOLOGIES

Smart systems are no longer a concept of the future. We have set out to explore the market in search of the latest HVAC technologies. Many of these innovations are still on the drawing board, but there are a number already available in the market.

10 revolutionary HVAC technologies:

1. Movement-activated air-conditioning
Engineers at MIT have come up with a new air-conditioning (AC) design that utilizes sensors along aluminum rods hung from the ceiling. Movement then activates these sensors. In other words, the air conditioner only kicks in when people are present.

2. Thermally driven air-conditioning
Another recently implemented design is thermally driven AC. Australian company Chromasun has produced a low-cost alternative to traditional AC units. It isn't a widespread technology yet, and it will likely be several years before this kind of design becomes widely available. However, thermally driven AC is a system that uses solar energy and is supplemented by natural gas, making it a highly efficient and effective system.

3. On-demand hot water recirculator
US company Taco has designed an on-demand pump for home water lines, which allows cool water to be circulated back into the water heater upon activation.

This product was engineered to be a solution to a major problem to which all of us contribute: each year, the average home wastes 12,000 gallons of water by just waiting for that water to warm up. Recirculating this otherwise-wasted water back into the system is an eco-friendly solution that could play a major role in future homes.

4. Ice-powered air-conditioning
California-based company Ice Energy has created an ice-powered AC system called the Ice Bear. It essentially works by freezing water in a tank overnight so the ice can help cool a building the next day. So far, the design has been able to provide enough cooling for a building for up to six hours, after which a conventional commercial air conditioner takes over.

Although this type of technology has quite a way to go before it can be the sole cooling system for a home, six straight hours of cooling a commercial building is a solid step in the right direction.

5. Sensor-enhanced ventilation
Ecovent Systems has developed a product consisting of sensor-driven vents that replace a home's existing ceiling, wall or floor vents. A smartphone app then controls the Ecovent, providing precise, room-by-room temperature control.

This system utilizes sensors to monitor a home's temperature, air pressure and other indoor air quality factors. Even though this system design is brand new, it's been well tested and has already hit the market.

6. Dual-fuel heat pumps

Another US company has come up with the dual-fuel heat pump concept. The argument is that heat pumps tend to be more efficient and provide the maximum amount of comfort when using a combination of fuel. The company's concept is a system that combines an electric heat pump with a gas furnace.

At low temperatures the pump draws on gas heat to maximize efficiency, and once the temperature rises above 35 degrees, electricity takes over.

7. Geothermal heat pumps

Despite being in production since the 1940s, geothermal heat pumps are only now seeing widespread uptake. With more homeowners waking up to the importance of going green, geothermal heat pumps are growing in popularity.

A geothermal heat pump gets its energy directly from the earth through an underground looped pipe that absorbs the heat and carries it into the home. When cooling is required, the process occurs in reverse, with the pump removing warmth in the home. A major bonus of a geothermal heat pump is the availability of free hot water.

8. Smart homes

Everything is getting smarter these days. From the cars we drive to the televisions we watch, just about every piece of tech you can imagine has been outfitted with smart technology. Connected systems and phone apps now allow us to control our home's lighting, heating, cooling, security systems, surveillance and entertainment at the push of a virtual button. Since many of these innovations are already available on the market, this movement toward a smarter home has changed how HVAC engineers and designers approach the next big thing.

9. Fully automated homes

Inspired by the smart home movement, fully automated homes will soon become a reality. There are already technological solutions on the market that are allowing companies to experiment with automated appliances and other products. Therefore, we expect that one day HVAC systems will be directly tied into other systems in the home, making adjustments according to the status of the rest of the house.

10. 3-D-printed air conditioners

Three-dimensional (3-D) printing has advanced rapidly over the last few years, and 3-D-printed HVAC products, such as AC systems, could very well be a reality one day.

In fact, US company Emerging Objects has already created a 3-D-printed brick that draws moisture out of an area to cool it. While this innovation can't be used in extreme temperatures, and we're still far from 3-D-printed air conditioners, it's just one example of the power of such technology.

Smart technologies allow building energy management systems (BEMS) to transform energy efficiency and provide a broad range of additional functionality. These systems are forecast for strong growth from a low base.

Source: Bill Joplin's Air Conditioning & Heating

SHIFT TOWARDS SMART CONTROL

- Due to the significant contribution HVAC and lighting systems make towards total building energy costs, smart controls have the potential to deliver large cost savings and improved functionalities versus traditional systems.
- In 2017, a report by the International Energy Agency (IEA) estimated that increased use of smart controls could reduce total energy consumption of commercial and residential buildings by 10% by 2040.
- McKinsey estimate that smart controls will drive the majority of growth globally in the building controls market.

Source: CIL Management Consultants

Greater functionality from smart BEMS[1] systems

Air quality tuning

Adjustment and detection of fresh and purified air

Predictive HVAC

Based on weather forecast or occupancy

Personalized lighting

To match employee/task preferences

Real-time occupancy

Meeting rooms or individual workstations

Wayfinding beacons

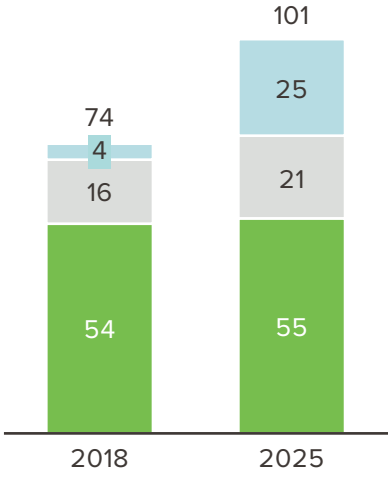
Assistance with locating spaces or items

Predictive maintenance

Data analytics allows efficient inspection and repair

Source: McKinsey 'Laying the foundation for success in the connected building era' October 2018

Global building controls[1] market US$bn



CAGRs	2018–2025f
Overall	**4.5%**
Smart controls and systems	30.0%
Energy management platforms	4.0%
Traditional controls and systems	0.3%

Note: 1) Building Energy Management Systems (BEMS) monitor and control services (e.g. HVAC, security and lighting) within a building.
Source: CIL Management Consultants

Spotlight

We spoke with the CEO at Volution Group to gain insight into its growth and acquisition strategy; additionally, he described their experience of dealing with Oaklins on the recent transactions of Energy Technique plc and VoltAir System AB.

Overview

Volution Group is a leading supplier of ventilation products to the residential and commercial construction sectors, with primary markets in the UK, the Nordics, Central Europe and Australasia. Products are designed to enhance customers' experience of ventilation by making them easier to use and reducing energy consumption and improving air quality and design.

Volution operates through two divisions: the Ventilation Group and Torin-Sifan, which supplies motors, motorized impellers, fans and blowers to OEMs of heating and ventilation products for both residential and commercial construction applications worldwide.

For the year end July 2018 Volution generated sales of US$270m and EBITDA of US$48m, with over 50% of sales outside of the UK. Based on the current market value of c. US$441m, the business trades on a price-to-earnings (P/E) multiple of 25.8x.

Q&A

What is Volution's current strategy?

We have three strategic pillars:

1. Organic growth in our core markets
We will continue to grow through a focused sales strategy for each of our core market sectors. We will focus on opportunities arising from favorable regulatory environments, and continue to build public awareness of indoor air quality issues and the benefits of higher value ventilation options in order to grow our markets and increase margins. We will continue to develop new products and deliver benefits from recently acquired businesses, and drive cross-selling initiatives.

2. Growth through a disciplined and value-adding acquisition strategy
We intend to achieve our goals through a combination of organic growth and selective acquisitions. We will continue to seek to acquire and integrate select businesses in the residential market and, where appropriate, in the commercial ventilation market.

3. Further development of Torin-Sifan's range and the building of customer preference and loyalty
In the context of a favorable legislation-led shift towards more technologically advanced, more energy-efficient and quieter electronically commutated/direct current (EC/DC) motorized impellers, we will develop our product range and enhance our customer offer.

As part of your growth strategy, what are your acquisition criteria?

Our focus is principally on opportunities within the residential and commercial ventilation market in Europe, where there are clear synergistic benefits available and, for key strategic opportunities, outside of Europe. Our acquisition size ranges from US$5m to US$50m, with an average of US$20m.

What differentiates Volution from its competitors?

Our key differentiators are pivotal to our business model and provide us with our competitive advantage. These are:

- **Innovation** — invest in new products to improve our customer proposition.
  → **10** new products launched during the year.
- **Scale** — make value-adding acquisitions and optimize investments by creating new products that can be sold through multiple geographies.
  → **20** production and distribution facilities across the UK, Europe and Australasia.
- **People** — continue to develop and invest in talent to drive value.
  → **1,634** employees across the UK, Europe and Australasia.
- **Brands** — maximize sales by focused customer-centric brands and create differentiated sales propositions serving segmented markets.
  → **16** key brands across the UK, Europe and Australasia.

What future trends do you see arising within the global ventilation market?

Energy efficiency
The arrival of leading-edge technology has reflected favorably on the global market. Smart controls are now being built with more precise sensors. Many instruments in the trade are getting a facelift, new applications are being introduced, and other key operations are using digital tools and Internet connectivity. The impact of modern technologies on the HVAC industry seemingly has no end in sight.

Green HVAC
Using renewable energy in general has grown significantly, as people become more environmentally conscious. Energy conservation, indoor air quality and comfort are among the core green building issues encompassed by HVAC design. As we move forwards we predict an increase in green systems.

How would you describe dealing with Oaklins?

Having now dealt with Oaklins on two recent transactions, Energy Technique plc (UK) and VoltAir System AB (Sweden), Volution clearly understands Oaklins' deep HVAC expertise. We value our relationship with Philip Barker, and Oaklins has positively demonstrated its global reach and access to international markets — which are key value-adds for us when looking for an advisor.

FACT
Thermal energy demand represents over 30% of overall energy consumption, and thus is a vital target for the decarburization of our energy supply.

Source: Energy and Buildings

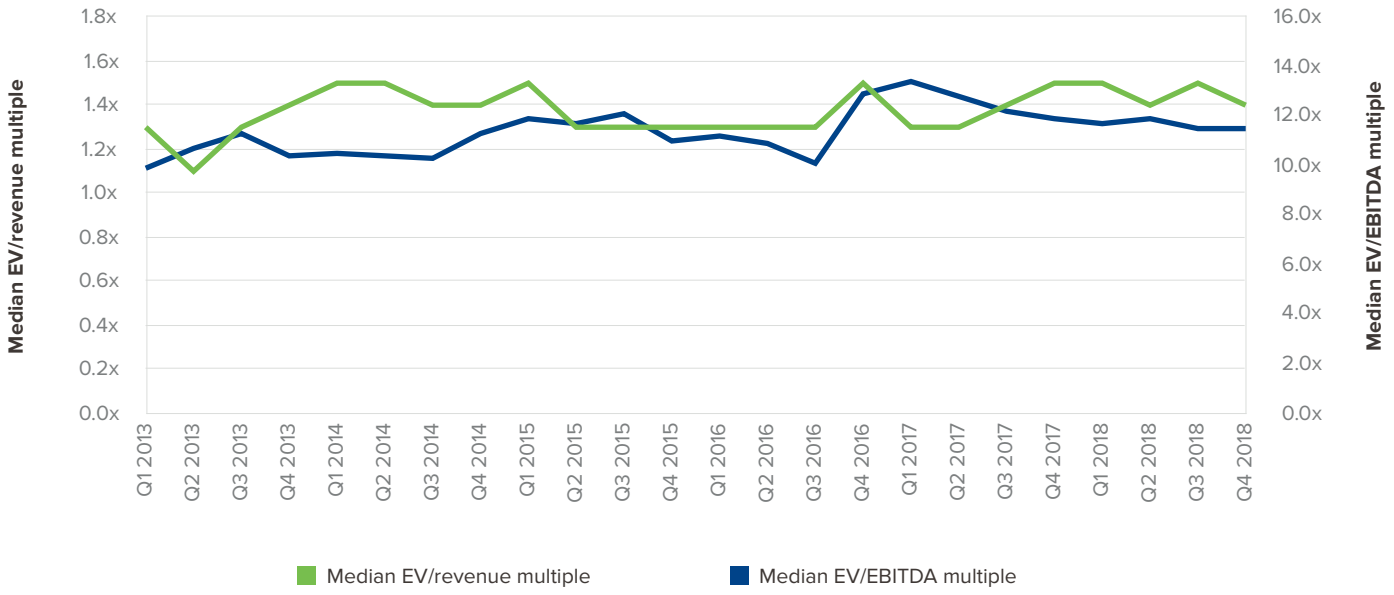
Selected public company valuations

Manufacturers	Head office location	Enterprise value (US$m)	Enterprise value			
			LTM sales	NTM sales	LTM EBITDA	NTM EBITDA
AO Smith		8,259	2.6x	2.6x	13.2x	12.5x
AAON		1,992	4.7x	4.1x	26.8x	18.8x
CENTROTEC Sustainable AG		250	0.4x	0.4x	4.9x	4.0x
DAIKIN		32,872	1.5x	1.4x	9.9x	9.6x
GREE		26,521	1.0x	0.9x	5.6x	5.6x
Johnson Controls		44,546	1.4x	1.8x	9.0x	13.0x
MODINE APPLIED THERMAL INNOVATION		1,225	0.6x	0.5x	5.8x	5.6x
NIBE		6,652	2.8x	2.6x	17.6x	16.5x
SINKO		279	0.8x	0.7x	4.7x	4.3x
SPX		1,791	1.2x	1.2x	12.5x	9.1x
systemair		730	0.9x	0.8x	10.4x	8.1x
zehnder		393	0.6x	0.6x	6.4x	6.0x

Source: Capital IQ

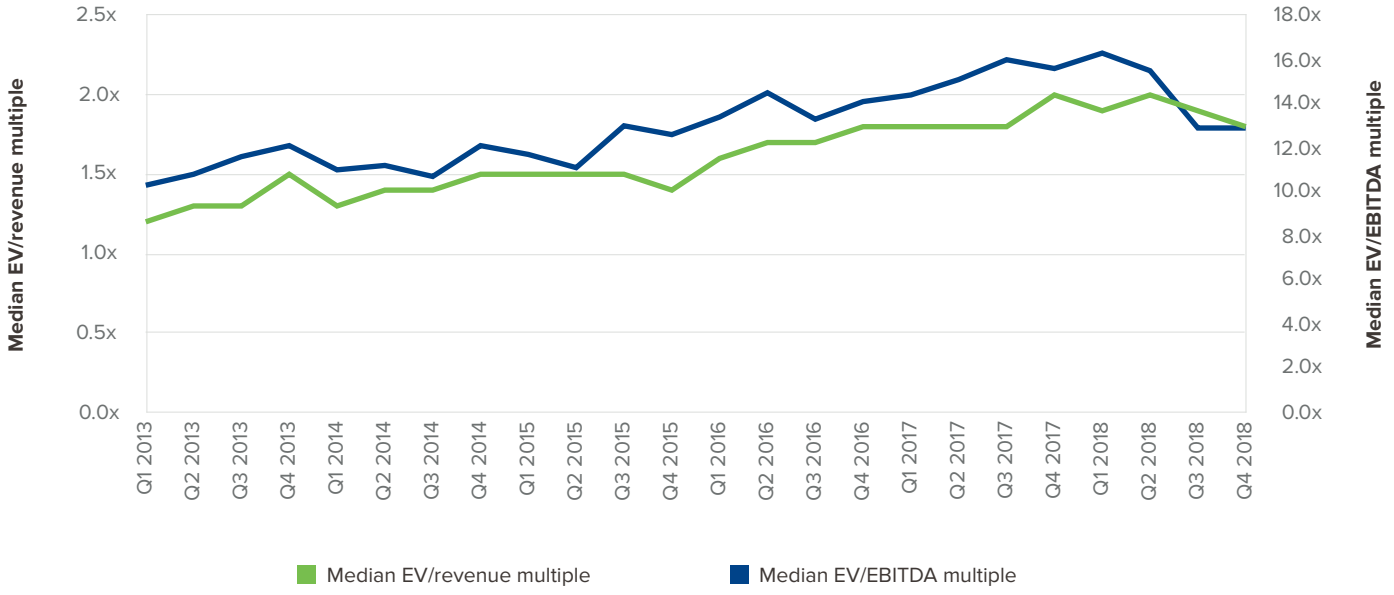
Selected public company valuation trends

EMEA HISTORIC MULTIPLES



Source: Capital IQ

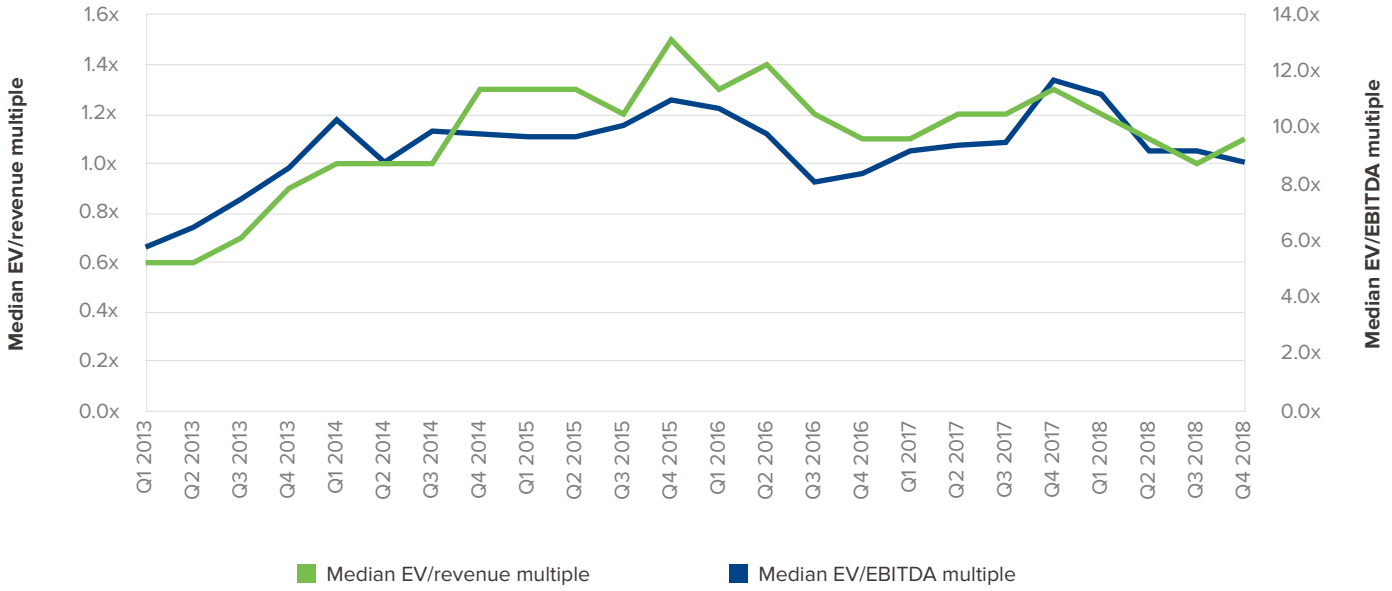
AMERICAS HISTORIC MULTIPLES



Source: Capital IQ

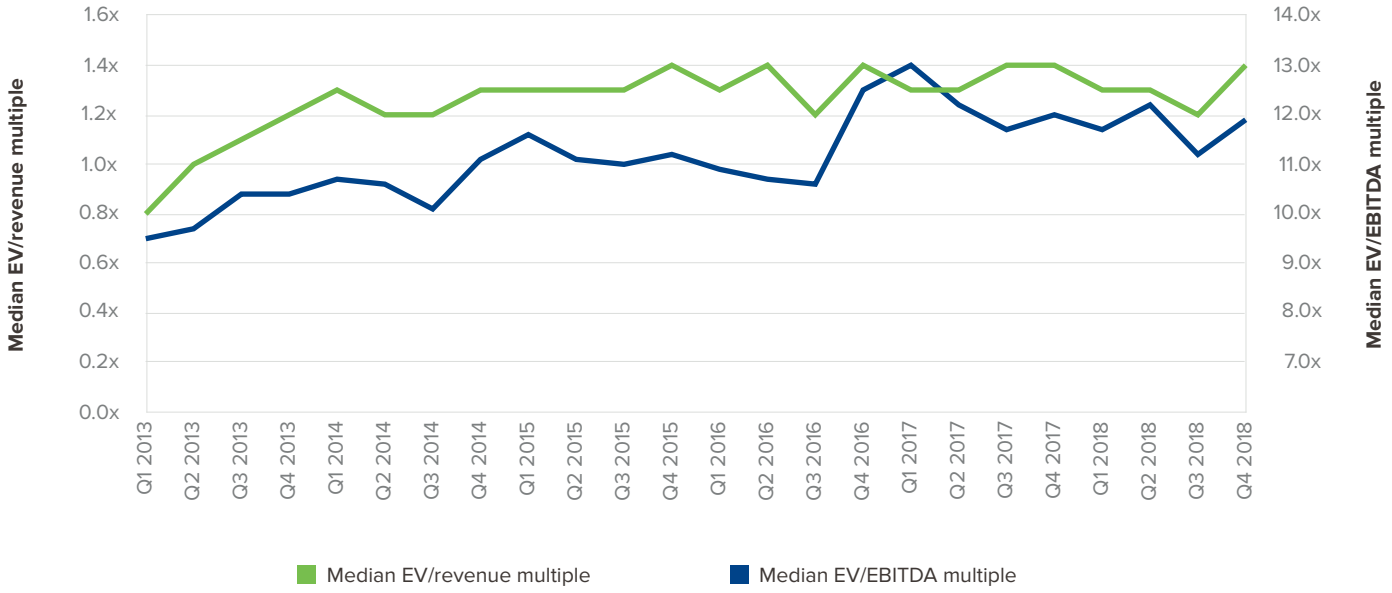
Selected public company valuation trends

ASIA-PACIFIC HISTORIC MULTIPLES



Source: Capital IQ

GLOBAL HISTORIC MULTIPLES



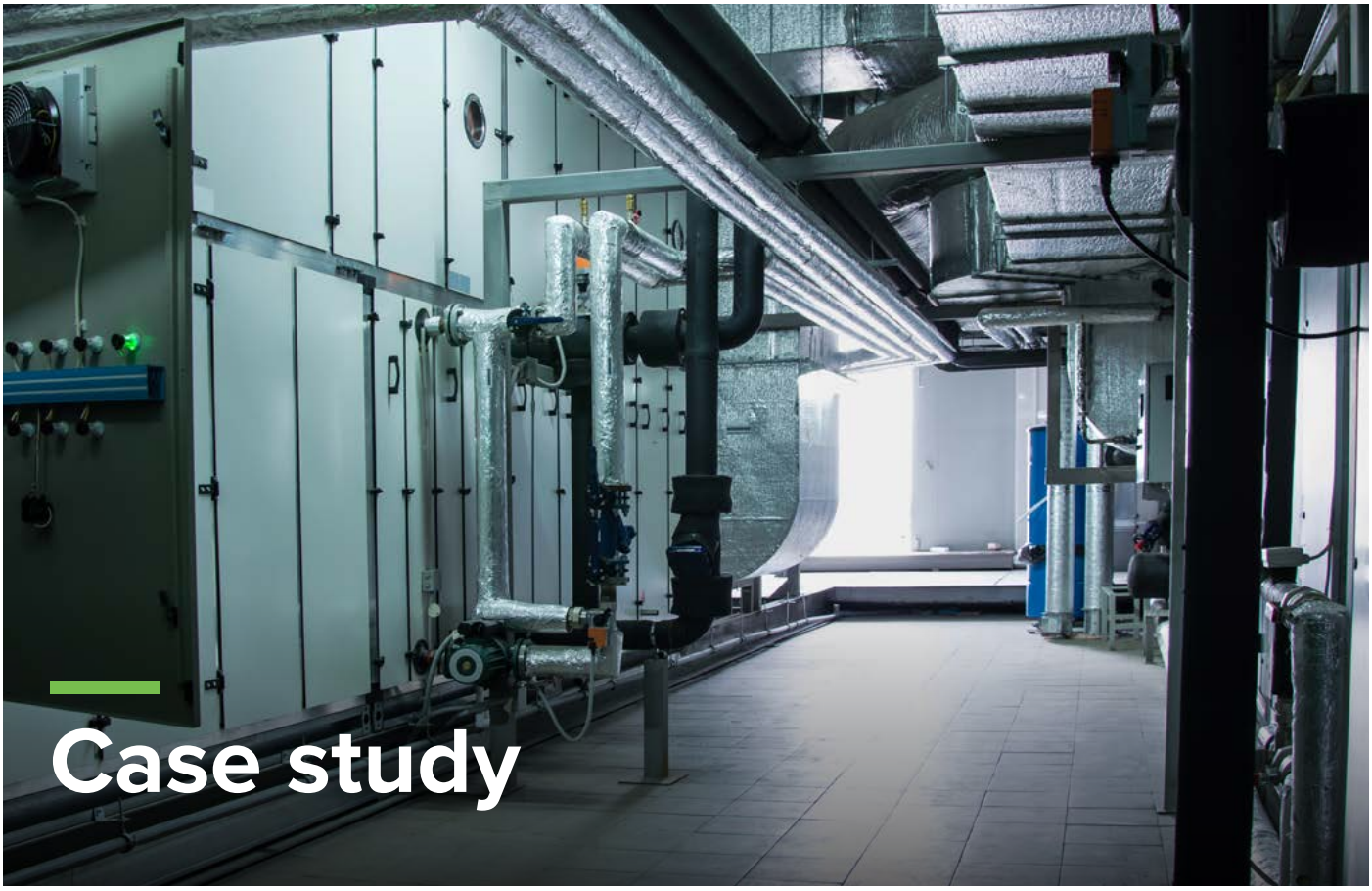
Source: Capital IQ

Recent M&A activity

A selection of private transactions in the HVAC sector

Date	Target	Country	Target description	Bidder	Country	Valuation		
						EV (US$m)	EV/ Rev	EV/ EBITDA
11-Dec-2018	ahlsell		Distributes installation products, tools and supplies, including HVAC, plumbing and electrical products	CVC Capital Partners		2,947	0.9x	9.8x
26-Nov-2018	AHT		Manufactures industrial cooling and freezing systems	DAIKIN		999	1.8x	N/A
08-Oct-2018	Livingston Mechanical Services		Provides HVAC and plumbing services in the UK	morris & spottiswood		N/A	N/A	N/A
02-Oct-2018	Specified Air Solutions		Designs and manufactures commercial and industrial HVAC equipment	Madison Industries Est. 1947		N/A	N/A	N/A
21-Sep-2018	HUDSON		Services air-cooled heat exchanger equipment	CHART		410	2.0x	10.0x
27-Aug-2018	Ott Distributors, Inc.		Distributes HVAC parts and equipment	MORSCO		N/A	N/A	N/A
19-Jul-2018	TRI DIM Filter Corporation		Manufactures HVAC filtration products	MANN+HUMMEL		N/A	N/A	N/A
27-Jun-2018	Zyklus Heat Transfer, Inc.		Manufactures heat exchangers for commercial refrigeration, refrigerated transport and AC	LU-VE Group		10	1.0x	5.9x

Source: Capital IQ



Case study

GRAND CAPITAL HAS SOLD VOLTAIR SYSTEM AB (VOLTAIR) TO VOLUTION GROUP PLC

The shareholders of VoltAir System AB (VoltAir), the private equity firm Grand Capital, have sold the company to Volution Group

Based in Torsby, Sweden, VoltAir is a manufacturer and supplier of centralized heat recovery ventilation systems for residential and commercial applications. Under its own brand, the company develops, manufactures and sells energy-efficient air handling units (AHUs) based on proprietary technology.

Volution Group is a leading supplier of ventilation products to the residential and commercial construction markets in the UK, the Nordics, Central Europe and Australasia. The group operates through two divisions: the ventilation group, consisting of 15 key brands, and the OEM division, which supplies motors, fans and blowers to OEMs of heating and ventilation products. Through this acquisition, Volution Group gains a platform for growth to become a leading provider of ventilation products in the Nordic region.

Oaklins' Swedish team served as the exclusive advisor to the owners of VoltAir in this transaction. With the support of Oaklins' teams around the world, strategic and financial buyers were identified and approached and a deal was closed with one of those buyers, Volution Group. This is another example of the strength of Oaklins' teams working together to provide the best possible M&A advice.

Q&A

Why did Volution acquire VoltAir System?

The acquisition of VoltAir System strengthens our product solutions by offering unique AHU design to deliver high efficiencies.

What does this mean for customers?

The specific characteristics of the VoltAir System heat exchanger mean that dirt and ice adhere poorly to the heat exchanger's surface, which contributes to the product's high resistance to freezing. The design, with low air velocities, laminar flow and a large heat exchange surface, means the product provides high efficiencies of up to 90%, without the need for defrosting. This makes them highly suitable for colder climates, without the issues associated with rotary heat exchangers, and provides VoltAir System with a unique and marketable benefit. In addition, VoltAir System is capable of designing highly flexible configurations for its modular systems. This means that installation in difficult-to-access locations in a building or the use of lower-value, sub-optimal shaped rooms for the ventilation equipment become possible. This can be attractive in building consultants' calculations of whole life costs for VoltAir System products.

"VoltAir System has market-leading flexible products that have low environmental impact and provide good, healthy indoor climates. We are delighted to have VoltAir System as part of the Volution Group, which is highly complementary to our strong position in the Nordic residential refurbishment ventilation products market and further develops our commercial proposition."

RONNIE GEORGE
CHIEF EXECUTIVE OFFICER, VOLTAIR SYSTEM

"Oaklins' Swedish team has, through great commitment and relevant industry expertise, been pivotal throughout the transaction, resulting in VoltAir gaining a new — for us, previously unknown — industrial owner, who can take the company to the next step. Their professionalism and experience enabled a smooth transaction with the right international buyer."

URBAN STURK
CHAIRMAN OF THE BOARD, GRAND CAPITAL, SWEDEN

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

HVAC 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 HVAC sector, with a large network of relevant market players worldwide. This results in the best possible merger, acquisition and divestment opportunities for HVAC 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.

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