

# clearview

## Additive manufacturing

As the additive manufacturing sector evolves, further M&A and private equity transactions are expected



### Rapidly increasing market

The market for additive manufacturing (AM) in industrial sectors has been increasing rapidly in recent years. The emergence of 3D-printed components has generated significant new opportunities in the aerospace, automotive, medical devices and tooling industries to name a few.

Whether AM is used for lightweight aircraft or automotive parts, consumer products, medical implants or industrial tooling, the process has created a whole new industrial sector. In fact, alongside automation, AM has an important role to play in creating new manufacturing models for the fourth industrial revolution, Industry 4.0.

AM allows for industrial components to be created with completely new product designs, whilst allowing faster responses to market demands. The process also brings manufacturing efficiencies, as well as reducing inventory and logistics costs. All of these features are in effect moving traditional industrial component production techniques towards digital product design.

With the adoption of AM, manufacturing companies can gain competitive advantages in their production processes and also obtain enhanced positions in industrial supply chains. It also allows them to enhance their overall product quality and offer specific component customisation.

### Machinery and materials

The AM sector relies on sophisticated additive production equipment, software and suitable production materials. In a market that was originally focused on the production of component prototypes, there has been a swift move into full-scale component production. Whilst there is no expectation that the process will fully replace

traditional precision engineering processes, the sector is developing rapidly as new machinery and materials are introduced.

AM production machinery is now evolving into fully-automated equipment that delivers repeatable manufacturing. This equipment is also adopting important improvements such as the use of multi-materials and performance monitoring software which enhances overall product quality. Large format 3D printing is now possible thanks to Big Area Additive Manufacturing (BAAM).

Meanwhile, there are considerable developments on the materials side, with alloy powders being enhanced with various forms of aluminium, nickel and titanium. Further developments are taking place with the use of ceramics and even organic materials. At the same time, AM is reducing the amount of material waste and reducing inventories.

### Supply chain and lifecycle

The use of AM as a component production process is changing the supply model in many industries. Original equipment manufacturers are having to decide whether to produce certain key AM components in-house or outsource the production to third-parties. This brings into sharp focus the issues around managing the design phase, and the location of AM production facilities.

The growth of AM sector is stimulated by important product lifecycle considerations. Components produced by AM often demonstrate greater integrity and lower lifetime maintenance costs. They also allow for an improved customisation and even enhanced aftermarket services through the rapid refurbishment of worn parts.

### M&A activity

The adoption of AM is accentuated by the increased M&A taking place in the sector. General Electric Co (GE) has been particularly active in the space having spent a combined €1.2bn in late 2016 to acquire Arcam AB, a Swedish manufacturer of AM equipment and powders, and SLM Solutions Group AG, a German manufacturer of AM equipment. The appetite for growing European-based players was demonstrated with Siemens AG's acquisition of an 85% stake in Material Solutions Ltd, a UK manufacturer of high-

performance nickel super-alloy components for aerospace, gas turbine and motorsport applications.

Meanwhile, US industrial group Precision Castparts Corp, a unit of Berkshire Hathaway Inc, acquired Atlantic Precision Inc, a US manufacturer of 3D-printed AM components for the aerospace and energy industries.

Further M&A activity is expected as smaller players enhance their coverage, larger groups establish their supply chains, and new technologies evolve.

### Case study

#### Clearwater International advises the shareholders of KEONYS on the sale of the company to CENIT

For more than 20 years Paris-based KEONYS has grown to become the leading VAR (Value Added Reseller) of Dassault Systèmes PLM (Product Lifecycle Management) and 3D design software and related services in France. In the last 10 years the company has also expanded into Belgium, the Netherlands and Germany. With c. 160 employees and more than 1500 clients the company had sales of c. €56m in 2016.

Since its establishment in 1988, CENIT is a financially independent IT software and consulting firm for business processes in the manufacturing industry and for financial service providers with Product Lifecycle Management (PLM) and Enterprise Information

Management (EIM) software and services. It is the leading German VAR for Dassault Systèmes PLM and 3D design software, focusing on the automotive, engineering, and aerospace sectors. It is represented around the world at 17 locations, in six countries, on three continents with 615 employees. The company, headquartered in Stuttgart, is listed in the Prime Standard of the German Stock Exchange and had sales of c. €124m in 2016.

The acquisition of KEONYS by CENIT creates the world N°1 VAR of Dassault Systèmes PLM and 3D collaborative design software and related services.

The Clearwater International team was led by Managing Partner Dierk Rottmann and Senior Adviser Alexius Feit.

### Our recent deals



**PLM GROUP**

Largest Nordic supplier of technical software solutions

Clearwater International advised on the sale of the group to a number of financial investors



**MM COMPOSITE**

Composite components

Clearwater International advised MM Composite on its sale to NASDAQ-listed SP Group



**Carbures**

Engineering and manufacturing company in composite structures

Clearwater International advised on the joint venture between Carbures and Guanglian Aeronautic Composite Materials Process & Equipment Co.

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