Research as a Service

AML3D Ltd

Initiation Report

Additive manufacturing matures

Additive Manufacturing

13 October 2021

AML3D Limited was established in 2014 to commercialise WAM® (Wire Additive Manufacturing), an additive manufacturing technology for the cost-effective production of large, high-performance metal components and structures. AL3 listed on the ASX in April 2020 at $0.20/share, raising $9m and raised an additional $7m in October 2020 to hasten the commercialisation programme. The company has established a contract manufacturing facility in Adelaide, is establishing a similar facility in Singapore and is making progress with customers for the proprietary ARCEMY® WAM® modules which are capable of manufacturing items up to 6m long – a significant increase in scale relative to most competing technologies. In our view, AL3 has invested resources in customer development which are on the verge of converting to an increase in manufacturing and machine sales. We initiate coverage with a base case DCF-derived valuation of $71m or $0.475/share (against a reference price of $0.145/share) and expect well-developed customer relationships to push AL3 to higher levels of production.

Business model

AML3D generates revenue from contract manufacturing of components using its WAM process, sales of the ARCEMY® WAM® modules and licencing revenue from these sales after the first year. The company has a manufacturing facility in Adelaide, additional capacity under development in Singapore and a strong level of interest in machine purchases due to the large scale possible using the WAM® technology.

Momentum building in 2021

During 2021, AML3D completed the construction of an expanded manufacturing facility in Adelaide allowed commissioning of seven production cells and recruitment of additional experienced staff. Momentum continued with a development programme with Lightforce for titanium body armour progressed; collaboration and partnership agreements were reached with AdditiveNow and others; test products were delivered to clients in the Marine (Austal) and Aerospace (Boeing) sectors; AL3 entered research partnerships with Flinders University and CSIRO, and .and has recently announced a joint R&D presence with BAE at Tonsley tech park. Two ARCEMY® modules were sold in the financial year with a third confirmed post year end.

Base Case DCF Valuation of $71m with Upside to $124m

We've used discounted cashflow to value AML3D due to the company's early stage of development. Negative free cashflow was reported in 2021 and is expected in 2022 and 2023. We expect strong free cash generation thereafter. Using a WACC of 11.1% (Beta 1.5 vs measured Beta of 0.21, terminal growth rate of 2.2%) we derive an equity value of $71m or $0.475/share on the current issued capital of 150.4m shares. Our base case is premised on announced agreements and customer interest levels with a conservative conversion rate of customer inquiries to manufacturing and machine sales. We have additionally modelled a better and worse profile of future sales based on estimates of market penetration over time. We feel there is considerable upside possible in this valuation with our high valuation at $0.829/share.

Historical earnings and RaaS estimates (A$m)

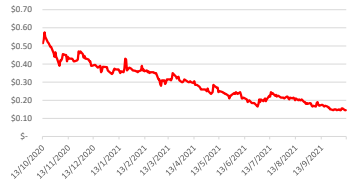
Year end	Sales Revenue	Gross Profit	EBITDA	NPAT	EPS (c)	EV/Sales (x)
06/20a	0.3	0.2	(3.2)	(3.2)	n.a.	46.6
06/21a	0.6	0.3	(5.1)	(5.5)	(3.8)	23.6
06/22e	3.7	1.2	(3.2)	(2.8)	(1.7)	5.2
06/23e	7.7	3.1	(1.4)	(1.6)	(1.0)	3.0

Source: Company data, RaaS estimates for FY22e and FY23e

Share details

ASX Code	AL3
Share price	$0.145
Market Capitalisation	$21.8M
Shares on issue	150.4M
Net cash at 30/06/2021	$7.3M
Free float	~54%

Share performance (12-months)



Upside Case

- Strong customer interest leads to machine orders
- Current trial product deliveries convert to manufacturing contracts
- First mover advantage is maintained through R&D

Downside Case

- Slow conversion of customers
- Further delays in expansion due to COVID
- Product trials do not convert to sales

Board of Directors

Stephen Gerlach	Chairman
Andrew Sales	Founder / CEO
Kevin Reid	Non-Executive Director
Sean Ebert	Executive Director
Leonard Piro	Non-Executive Director

Company contacts

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Research as a Service

AML3D Limited

AML3D Limited was established in 2014 to commercialise WAM® (Wire Additive Manufacturing), an additive manufacturing technology for the cost-effective production of large, high performance metal components and structures. AL3 listed on the ASX in April 2020 and raised a total $16m in 2020 to hasten commercialisation of the company's WAM® technology. The company has established a contract manufacturing facility in Adelaide, is establishing a similar facility in Singapore and is making progress with customers for the proprietary ARCEMY® WAM® modules which allow a significant increase in scale relative to competing technologies. In our view AL3 has invested resources in customer development which are on the verge of converting to an increase in manufacturing and machine sales.

Investment case

In our view, ALM3D Limited can achieve success for the following reasons:

- Industry globally is recognising the benefits delivered by additive manufacturing processes and AM is maturing rapidly in both applications and processes.
- The company's Wire Additive Manufacturing process is patented in Australia with applications in additional jurisdictions (NZ, South Korea, and Japan). WAM® uses a robot arm to manage an arc welder which takes wire feedstock and deposits metal beads additively (layer by layer) to build a design from a CAD model loaded into the proprietary WAMSoft®. AL3's patents primarily relate to the localised gas shield, which allows welding to occur in an open space, in the context of additive manufacturing.
- AML3D's technology allows a wide range of product sizes with size only limited by the number of robotic arc welders able to operate on the object. Most additive manufacturing is limited in scale by; the nature of the building material (powder, plastic) or the need for an inert atmosphere and hence a closed compartment which (in the case of other Direct Energy Deposition methods) limits production size. The technology can be used with all weldable metals and alloys.
- Due to the production scale possible the advantages of additive manufacturing – ordering and production flexibility, efficiency, and small scale – become available to a wider range of customers. Two of AL3's trial products have weighed 150kg (Boeing's mandrel tool) and 1,450kgs (Panama Chock used for mooring ships for Keppel)
- AL3 is accredited by Lloyds Register as an additive manufacturing facility, has been certified as compliant with ISO 9001 and complies with the globally accepted American Welding Society Standard for fabrication of metal components using additive manufacturing.
- Through a high level of customer inquiry and relationship building AL3 has established a list of high-quality potential customers which are now learning through trial production what the AML3D and the ARCEMY® WAM® modules can achieve for them. We expect these explorations to convert to orders in the coming fiscal year.

Valuation

DCF Valuation of $71m, potential to build faster once acceptance tipping point reached

We've used discounted cashflow to value AML3D due to the company's early development stage. AL3 had negative free cashflow in 2021 and is expected to remain slightly free cashflow negative in 2022-25. We model strong free cash generation thereafter. Using a WACC of 11.1% (Beta 1.5 vs measured Beta of 0.21, terminal growth rate of 2.2%) we derive an equity value of $71m or $0.475/share on the current issued capital of 150.4m shares. Our base case is premised on announced agreements and customer interest levels with a conservative conversion rate of customer inquiries to manufacturing and machine sales. We assume a

compound growth in free cashflow of 57% from 2025 to 2031 with negative cashflow in 2021 halving in 2022 and 2023. We have additionally modelled a better and worse profile of future sales based on estimates of market penetration over time. We feel there is considerable upside possible in this valuation.

- If customer conversion is slightly higher than our assumption,
- If the mix of machine orders is skewed more to larger ARCEMY® models than our assumption,
- If the value of parts manufactured is higher than our conservative estimates,
- If the manufacturing capacity utilised is higher due to faster market penetration.
- If current R&D projects around higher quality, proprietary inputs, and a higher capacity version 2.0 of the ARCEMY modules come to fruition on schedule.
- If planned distribution expansions in Singapore, then USA and UK are successful.

We have excluded development of the Singapore manufacturing facility from our forecasts despite the company's plans and capital allocated for the purpose. If the factors listed above skew more positively our base valuation can rise to $124m. We caution these are assumptions based on company performance to date and our expectations for growth in customer acceptance and planning for the use of additive manufacturing in supply chains. COVID-19 related delays are still to work through the supply and ordering chains and bring additional uncertainty to our forecast cashflow profile. We are confident that AL3 will nevertheless achieve significant sales as these issues recede.

Exhibit 1: Valuation methodologies addressed in this report

Valuation method	Discount rate	Value in A$m	Value per share
Base case DCF valuation	11.1%	$71m	$0.48
An upside case DCF	11.1%	$124m	$0.83
A downside case DCF	11.1%	$35m	$0.23

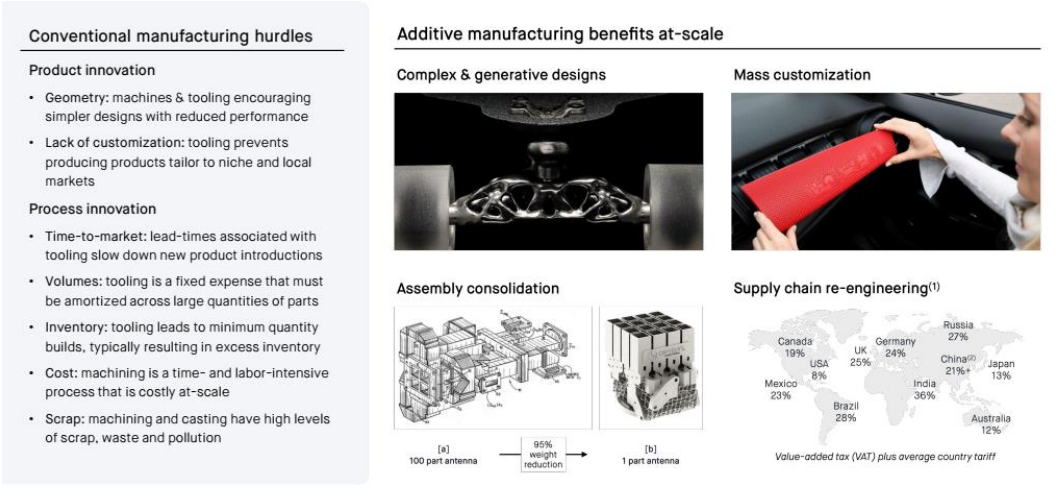
Source: RaaS analysis

Additive Manufacturing Technologies and Trends

The additive manufacturing sector encompasses a range of methods and materials with output varying in scale and use from human prostheses and bone replacement to the 950kg Panama Chock recently printed by AL3 for Keppel. Materials used also vary from plastics through a range of relatively exotic alloys, particularly using titanium, to the large steel-based products AL3 has delivered. A notable recent product example is a stainless-steel footbridge with complex curves produced in Amsterdam by a competitor company.

The underlying strength of the concept of additive manufacturing is the inherent production flexibility. Most modern products need a complicated mass manufacturing process to deliver many identical parts and end products. Additive manufacturing allows small production runs to be cost effective - even single parts may be produced for a fraction of the cost of setting up a full production line. This delivers obvious benefits for replacement and short production runs – particularly for smaller and isolated markets which are of insufficient scale to compete with larger international plants production costs. This flexibility with the complementary advantage of rapid prototyping is driving increased usage of additive manufacturing. AML3D brings those advantages to larger, metal-based parts which were outside the capacity of "conventional" additive manufacturing processes.

Exhibit 2: The advantages of additive manufacturing (Note Australia's low tax status!)

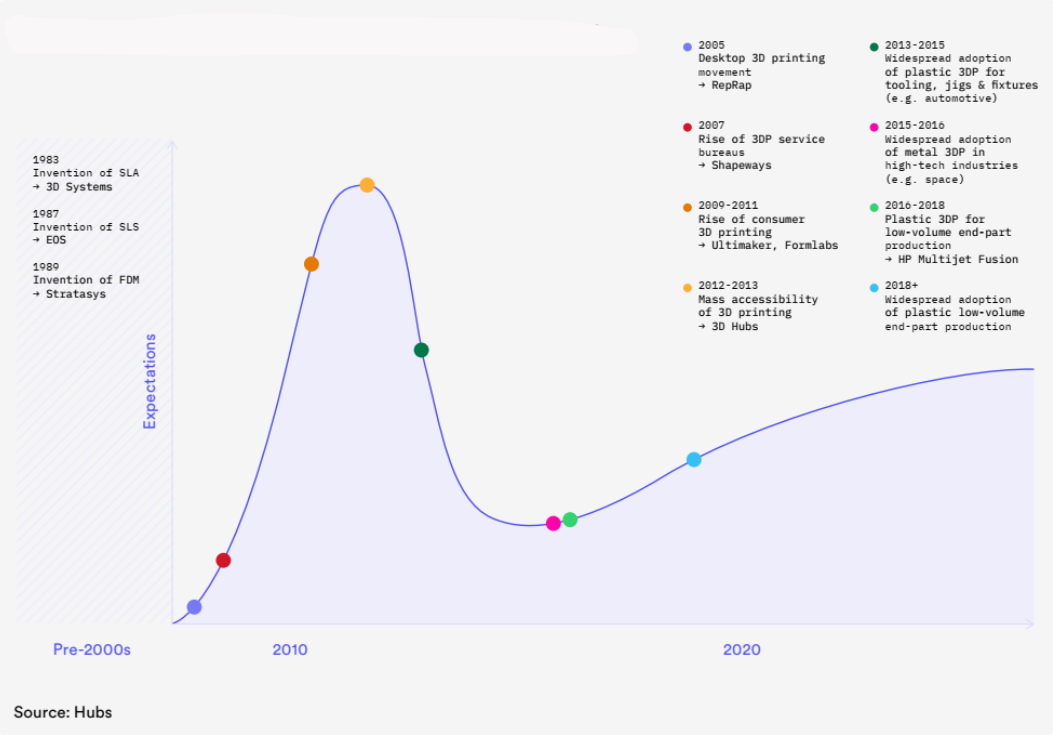


Source: Desktop Metal (NYSE:DM) investor presentation, June 2021.

AM technology has proliferated as patents have expired and increased capital invested. In 1981 Dr Hideo Kodama described a *photopolymer rapid proto-typing technique*, then in 1984 Charles Hull invented and patented a process for *stereolithography apparatus (SLA)* and in 1986 co-founded the first 3D printing company – 3D systems. Carl Deckard in 1988 patented a *selective laser sintering technology (SLS)* and the third of the main technologies, *fused deposition modelling (FDM)* was patented in 1989 by Scott Crump. The 1990's saw an introduction of new delivery methods, new uses and integration of computer aided design in the process. Between 2000 and 2010 3D printing started to become commercial with venture capital funding for some new technologies in the field. In 2009 and 2011 significant patents expired and catalysed the increase in applications and methods of additive manufacturing. AM has progressed to being described by some as a fourth industrial revolution, manufacturing 2.0 and other transformative terms. [1]

[1]Downloaded August 2021 https://en.wikipedia.org/wiki/3D_printing, https://www.3dsourced.com/guides/history-of-3d-printing/, https://www.linkedin.com/pulse/history-additive-manufacturing-timeline-clare-moore/.

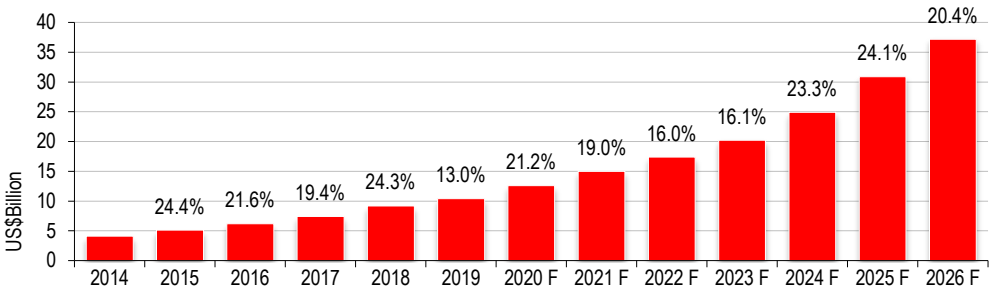
Exhibit 3: Hype cycle depicting the popularity of 3D printing over time



Source: HUBS, Additive manufacturing trend report 2021 (A ProtoLabs company)

The AM access platform HUBS has summarised data from nine market analysis firms to produce a consensus estimate of the size and growth of the AM sector. Note the addressable market is clearly much larger than this – the estimate is merely of actual spend on AM produced products. Market CAGR between 2014 And 2019 has been 16.8%p.a. and the market forecast to grow by a further 17.3%p.a. out to 2026.

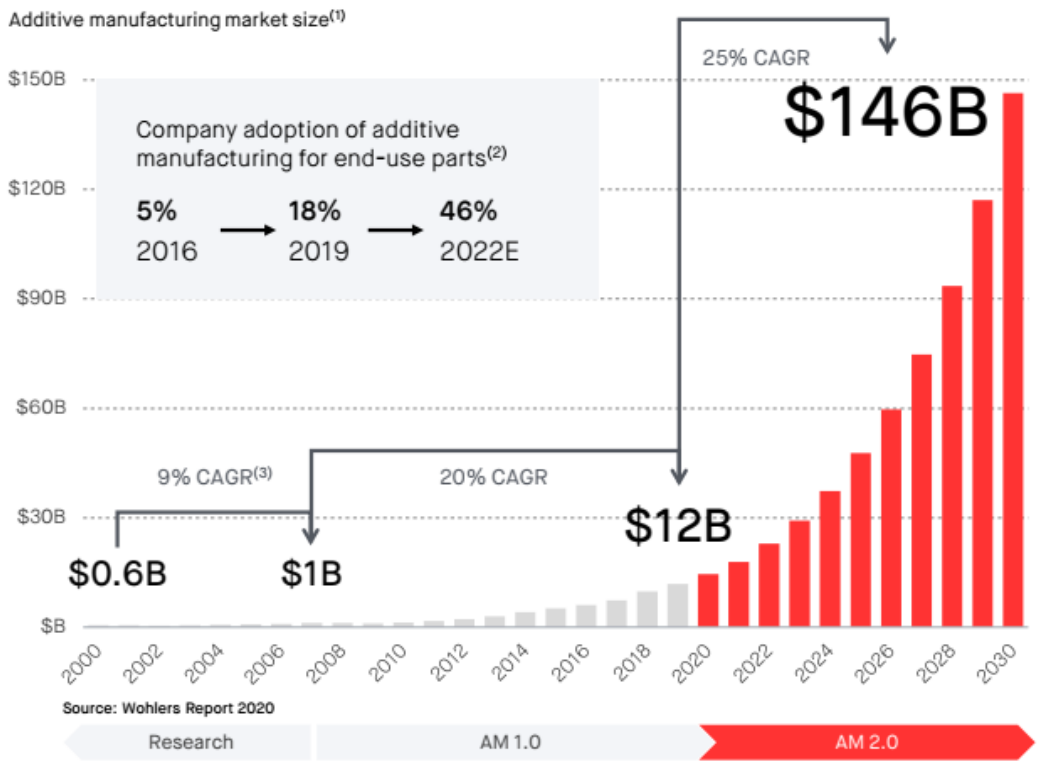
Exhibit 4: 3D Printing global market forecast size and annual growth



Source: [1] HUBS, Additive manufacturing trend report 2021 (A ProtoLabs company),
Historic market = average of Wohler's Associates and SmarTech estimates. Forecast market size = median of all forecasts. (SmarTech, Report Linker, Grand View Research, Research and Markets, Reports and Data, Valuates Reports, Fortunate Business Insights, Emergen Research, Arizton)

Alternative estimates are provided by the US firm Desktop Metal (NYSE:DM)- primarily sourced from the Wohler's Associates report for 2020.

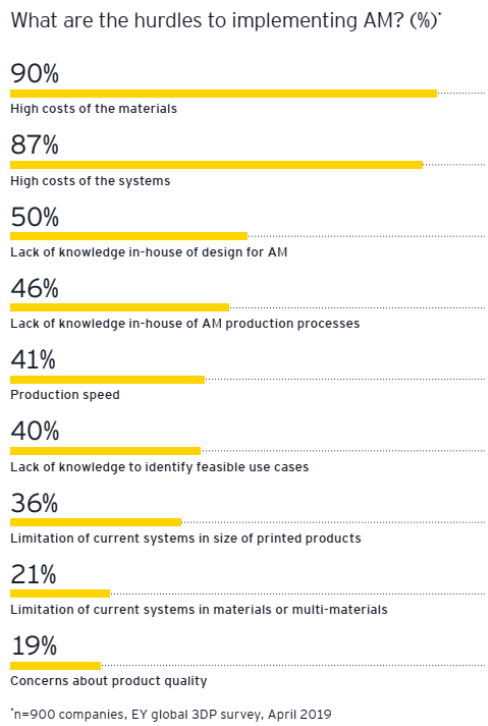
Exhibit 5: Additive Manufacturing Market



Source: Desktop Metal June 2021 presentation (slide 8), (1) quotes Wohler's Associates 2020 Report for 2020-2029f,
2030 based on DM management forecast calculations (2) source is EY's Global Report 2019, "3D printing: hype or game changer?"

Overall Wohler's and Desktop Metal are more optimistic than the consensus of Exhibit 4 above with significant acceleration in take-up in the short term to 2022 and continuing acceleration out to 2030.

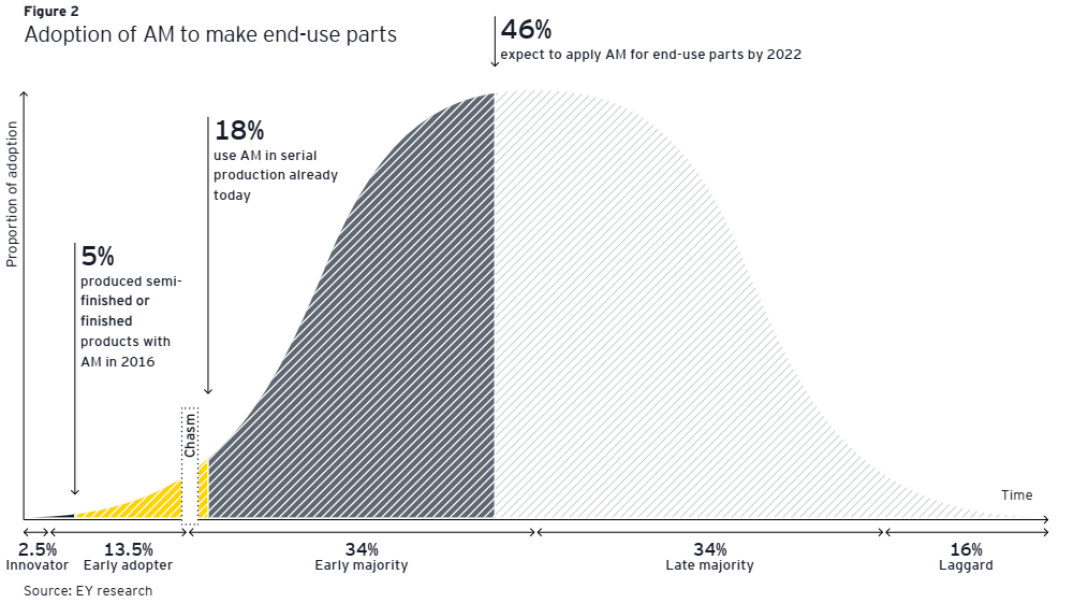
Exhibit 6: Implementing AM



Source: EY's Global Report 2019, "3D printing: hype or game changer?"

Despite the strong expected growth in the use of AM by industry there remain some significant barriers as detailed via an EY survey on the subject. Hence a significant part of an AM company's task is to lead customers through the process of assessing the benefits and costs of using AM in their own production process. This adds to lead times to conversion of inquiries to sales but we expect these issues will diminsh as both sides become better educated and more sophisticated in their us of the technologies inherent in AM processes. EY's survey additionally highlights the increase in the adoption rate achieved as AM technology has matured to a reliable method of producing end parts and components rather than remaining a prototyping process. In EY's 2016 survey 5% of companies surveyed were applying AM to produce end parts and components. In 2019 that had risen to 18% of those surveyed with the expectation that adoption is likely to rise to 46% by 2022 as the increased reliability of the various processes convinces the "Early Majority" to take up the technology.[2]

Exhibit 7: A Tipping Point in AM adoption for end-use components



Source: EY's Global Report 2019, "3D printing: hype or game changer?"

[2] 3D printing: hype or game changer? Global EY Report 2019 and Geoffrey A. Moore, Crossing the chasm (3rd edition, p.14., 2014).

Technology & Business Model

The company produces three standard models of the ARCEMY® Wire Additive Manufacturing (WAM®) and automated Arc Welding module, plus offers bespoke design to suit customer needs – each varying in bench rotator size, robotic linear track length and welding arm size and reach. The modules assembled and commissioned by AML3D include robotic automation systems currently supplied by ABB, welding power sources for wire feedstock control from Fronius, and proprietary PLC controllers and circuit boards from diverse third parties. All hardware is synergically controlled by AL3's proprietary AMLSoft®. The module is differentiated from other additive manufacturing technologies by the scale of the part it's possible to manufacture in a single run. Competitors in the space are limited by welding methods which require an inert atmosphere to prevent oxidation at the weld. They achieve this by conducting operations inside an enclosed compartment which delivers a quality weld but limits product size. AML3D uses an in-line synergically controlled shielding method to maintain an inert atmosphere around the solidifying molten metal bead as the robotic arm travels. The limit in part size then becomes either the reach of the robot arm or the length of the linear track upon which the robotic arm travels to manage the welding head, and the size of the welding bench. AL3 also manages the process with proprietary software, WAMSoft® and optimises customer part design for WAM®. The result is more efficient use of material, lower energy use in production, higher strength for weight (depending on design and material specifications) and greater design and delivery flexibility. AL3 was granted an Australian patent over the WAM® process in May 2021.

Exhibit 8: ARCEMY® Wire Additive Manufacturing Arc Welding Module

Source: AML3D Website, www.aml3d.com.au

AML3D aims to commercialise the innovative Wire Additive Manufacturing technology and management software through contract manufacturing and sale and licencing of ARCEMY® WAM® modules to large and small manufacturers of metal components. Acceptance of the benefits of the additive manufacturing approach is now translating into actual incorporation of 3D printing style processes into production and supply chains. There is potential for this process to accelerate as companies and countries seek higher levels of independence post the supply chain disruptions caused by the COVID-19 pandemic.

To achieve this AL3 has embarked on a range of partnerships with potential customers to produce trial and "proof-of-concept" products. Successes to date include:

Exhibit 9: ALM3D Trial product orders since IPO, April 2020

Customers	Product
Keppel Corporation (SGX:BN4)	Panama Chock (Shipboard mooring bollard, 950kgs)
ST Engineering (SGX:S63)	ARCEMY® Module
Lightforce (South Australia)	Body Armour
AdditiveNow (JV Aurora Labs and Worley)	Large, high wear, components for mining and oil & gas sector
Austal Ltd. (ASX:ASB)	Demonstration part for maritime defence projects
3D Printing Corporation (Japan)	Demonstration stainless steel propeller
	Additional demonstration parts for client
ASC Shipbuilding (BAE)	Demonstration parts for Hunter Frigate programme
Rowlands Metalworks (South Australia)	ARCEMY® Module
iKAD Engineering (WA)	ARCEMY® Module
Thyssenkrupp & Wilhelmsen	Stainless steel impeller demonstration component
Boeing Company (NYSE:BA)	Mandrel tool for evaluation
Keppel Corporation (SGX:BN4)	Panama Chock (Shipboard mooring bollard, 950kgs)

Source: Company announcements

These partnerships and commissions are substantiating AL3's ability to produce a superior product both flexibly and relatively cheaply. Post IPO the company aimed to establish a Singapore Production facility which has commenced but been delayed due to COVID related issues. We expect this facility will, when in production, allow a range of potential Asian customers to familiarise themselves with the process and lead to an acceleration in manufacturing activity and machine sales.

Keppel Technology and Innovation recently reported that AL3's test print of a 1,450 kg Panama Chock (used on ships for feeding mooring ropes and "the world's largest 3D printed shipboard fitting") received a verification certificate from DNV allowing the component and process to be used on commercial vessels. Keppel have indicated they will continue to explore areas where 3D printing can enable a potential productivity step change in shipbuilding. We expect further news regarding additional components and manufacturing orders in this area.

Exhibit 10: Panama Chock at test lab Singapore

Deck mounted type Panama Chock (SWL150Ton) produced during the additive manufacturing project.

Source: Company announcements

The Company's growth strategy post IPO involves:

- pursuing business opportunities globally, focusing initially on customers and industry partnerships in high margin industries such as the marine and defence sectors.
- expanding its contract manufacturing customer base to drive long-term repeat contracting revenue.
- capitalising on its first mover advantage by establishing the Singapore Contract Manufacturing Centre to provide the Company with greater exposure to the maritime service industries of Singapore and enable it to compete for contracts in South-East Asia with significantly reduced lead times.
- capitalising on credibility built from its contract manufacturing services to effect sales of ARCEMY® printing modules to customers looking to establish in-house 3D printing capabilities either for stationary or remote area mobile applications. This is also expected to drive annual software licencing, service and maintenance and wire feedstock maintenance agreements.
- investment in sales and marketing; and
- research and development of new products and processes. R&D will focus on the application of new alloys and exotic metals to the WAM® technology, enhancing software to incorporate machining capabilities, and robotic post-finishing equipment development. This will continue to build on the databank of metals held within the WAMSoft® production library.[3] Current R&D projects include.
  - Version 2 of the ARCEMY® Module which will increase capacity via additional input materials management and add in-line finishing both speeding production and adding value to the final product.
  - A partnership with Flinders University assessing microstructure and corrosion qualities of AL3 printed products
  - A partnership with Deakin university to produce a high strength aluminium-scandium feedstock wire to enhance product strength and cost outcomes and provide an additional revenue path in welding consumables.
  - Membership of Flinders' and BAE's "Factory of the Future" programme.

As shown by the events and client summaries (Exhibits 9 & 11, above and below) ALM3D is executing its strategy effectively.

[3] AL3 prospectus April 2020

Recent Events

Exhibit 11: Significant Operational Announcements

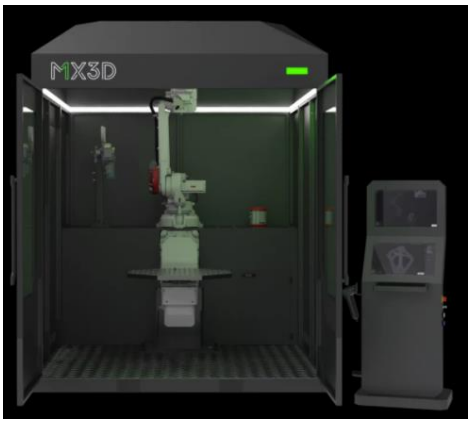
Date	Event	Description
20/04/2020	Corporate Update	IPO raising $9m, Panama Chock delivered to Keppel Corporation (SGX: BN4), ARCEMY® unit delivered to ST Engineering (SGX:S63) under "rent to buy" agreement
24/04/2020	WAM® printed steel product testing	WAM® steel product testing confirms strength higher than forged equivalents
6/05/2020	Operational Update	Lease signed on new office and manufacturing centre, Lloyds Register accreditation expanded
11/05/2020	Key Management Appointments	Singapore GM and Australian BDM appointed
29/07/2020	Results from next-gen body armour testing for Lightforce	Printed Body Armour Phase one testing completed successfully for Lightforce
24/08/2020	AML3D Enters Into Global Collaboration with AdditiveNow	AL3 to provide expertise to customers in the energy, chemicals, oil & gas, and mining industries (to complement Aurora Labs expertise in other areas of AM)
3/09/2020	AML3D executes contract with Austal	Contract to co-develop components for maritime defence use. Prototype lifting device commissioned as a test case.
8/09/2020	AML3D to co-develop industrial internet of things technology	MoU with Advanced Manufacturing Growth Centre to apply internet-of-things concepts to ARCEMY® modules
24/09/2020	AML3D ships 3D printed propeller	Ships propellor delivered to 3D Printing Corporation (Japan) a consultancy firm focused on enhancing manufacturing capabilities of their clients.
5/10/2020	AML3D raises $7m to accelerate commercialisation	$7m capital raised
29/10/2020	WAM® technology evaluation for naval shipbuilding	Evaluation programme initiated by ASC Shipbuilding (BAE) designer and builder of nine Hunter Class Frigates for RAN
9/11/2020	Rowlands Metalworks Purchases ARCEMY® Module	Sale of ARCEMY® module to South Australian based fabricator for $400,000
7/12/2020	AML3D commences first programme of work for AdditiveNow	Materials testing programme commenced for potential high-wear parts supply
7/12/2020	Next-gen body armour programme progresses to stage 2	Phase 2 testing initiated with supply of additional prototypes
24/12/2020	iKAD Engineering purchases highly specialised ARCEMY® module	WA based iKAD purchased ARCEMY® module for >$500,000 dependent on final spec
6/01/2021	AML3D to manufacture impeller for Thyssenkrupp & Wilhelmsen	Stainless steel impeller as a demonstration product relative to casting
2/03/2021	AML3D appoints new CFO	Hamish McEwin appointed as CFO
3/03/2021	AML3D to deliver industrial components to key 3DPC client	Demonstration components to be delivered to client of 3D Printing Corporation (Japan)
19/03/2021	Maritime product receives key industry body verification	Accreditation from DNV for naval and commercial vessels
5/05/2021	AML3D Technology Update	R&D will allow next generation 3D printers up to 5x faster than existing with reduced machining and finishing. Design completion expected by Q1 FY22. Includes WAMSoft upgrade for existing clients and development of a new material strength prediction tool with CSIRO
27/05/2021	Partnership with Flinders University	Research assessing microstructure and corrosion qualities of AL3 Wire Arc 3D printed alloys.
11/06/2021	Australian Patent Granted	Patent granted for AML3D's WAM® process
30/06/2021	Purchase Contract from Boeing	AML3D to produce and supply a 3D printed mandrel tool for testing
9/07/2021	AML3D to establish R&D Facility	AML3d joining BAE's and Flinders University "Factory of the Future" programme
18/08/2021	Prototype Testing of body-armour expanded	Lightforce have expanded the possible ballistic range of the armour for further testing of product possibilities
25/08/2021	Preliminary Final Report	
07/09/2021	Welding Wire Composition Project	Aluminium-Scandium welding wire developed with Deakin university
14/09/2021	Keppel receives DNV Verification of Panama Chock	Verification allows production and use of similar components on commercial shipping

Source: Company data

Competitors

The additive manufacturing sector has a broad offer and application; however, the subsector of metal-based AM tends to focus on Aerospace, Defence, Marine, Mining, Oil & Gas and Transport, all areas which require a diverse range of tooling, componentry, weight solutions and innovation to remain competitive. The company nominates small number of firms globally who can be classed as competing in the same space of large-scale metal AM however the broader AM market has many similar companies at different development stages and with different technology solutions. We show a non-comprehensive summary of comparable companies below (Exhibit 12). While these and many other companies offer AM services most are not capable of producing objects of significant scale. The list below highlights that the sector is still in an early stage of development with most of the group cashflow negative. Geffertec, MX3 and AL3 offer Wire Arc Additive Manufacturing (WAAM) and of the three only ALM3D has a process patent and has the current ability to produce large components, without using an enclosed machine.

Exhibit 12: Competing Wire Arc AM & Cold Spray Modules from Geffertec, MX3 & SPEE3D



Source: Geffertec website www.gefertec.de/en/, MX3 website mx3d.com, SPEE3D website www.spee3d.com

We found companies in Asia to be both private and focused on small scale 3D printing - most often with powdered materials using a range of printing technologies.

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Exhibit 13: Comparable AM companies

Code	Company	Domicile	IPO date	Development Stage	Technology	Product	PE	EV / EBITDA	Price/ Sales	ROE FY0
DDD	3D Systems Corp	USA	26/03/2011	Developed	Multiple	AM Machines	67.9	52.9	2.2	(31.4)
DM	Desktop Metal Inc	USA	15/03/2019	Developing	Single-pass Inkjet	Machine sales			164.9	(8.4)
MTLS.O	Materialise NV	Belgium	25/06/2014	Developing	Multiple	Bureau	344.3	160.2	13.9	(5.2)
PRLB.K	Proto Labs Inc	USA	24/02/2012	Mature	SLS/DMLS	Prototyping	41.1	42.6	9.5	8.3
PTC.O	PTC Inc	USA	8/12/1989	Mature	CAD	Software	33.1	31.1	6.6	9.9
SSYS.OQ	Stratasys Ltd	USA	3/12/2012	Developing	FDM	Machine sales			2.2	(46.3)
Private	Geffertec	Germany	n.a.	Developing	WAAM	Machine sales				
Private	MX3	The Netherlands	n.a.		WAAM	Machine Sales, Manufacture				
NTI.OL	Norsk Titanium AS	Norway	2021	Developing	WAAM	Manufacture	(18.4)	(41.2)	1601.7	.
3DA.AX*	Amaero International Ltd	Australia	6/12/2019	Developing	Laser Powder Bed Fusion	Machine, input, and product sales			215.3	(59.9)
A3D.AX	Aurora Labs Ltd	Australia	16/08/2016	Developing	SLS, DED	Machine sales			62.5	(158.2)
TTT.AX	Titomic Ltd	Australia	21/09/2017	Refocusing	Metal Cold Spray	Machines, Powders, Prototyping			30.9	(98.1)
Private	SPEE3D	Australia	n.a.	Developing	Metal Cold Spray	Machine sales				

Source: Refinitiv Eikon, RaaS *3DA is also a RaaS research client Prices as at 12 October

Competitor descriptions[4]

3D Systems Corporation is an additive manufacturing solutions company. The Company is principally engaged in providing three-dimensional (3D) printing and digital manufacturing solutions. 3D Systems offers a range of 3D printing technologies, including Stereolithography (SLA), Selective Laser Sintering (SLS), Direct Metal Printing (DMP), MultiJet Printing (MJP) and ColorJet Printing (CJP). The Company markets its products and services through subsidiaries in North America and South America, Europe and the Middle East, and the Asia Pacific region.

Desktop Metal Inc. offers additive manufacturing technologies focused on the production of end-use parts. The Company offers a portfolio of integrated additive manufacturing solutions for engineers, designers and manufacturers comprised of hardware, software, materials, and services. Its additive manufacturing solutions include Production System, Shop System, Studio System and Fiber. Production System is an industrial manufacturing solution that uses its SPJ technology. Shop System is designed to bring metal additive manufacturing to machine and job shops. Studio System is a three-dimension (3D) metal additive manufacturing system. Fiber is a desktop 3D printer.

Materialise NV is a Belgium-based company engaged in the software industry. The Company is a provider of additive manufacturing software and three-dimensional (3D) printing services. Materialise NV incorporates 3D printing experience into a range of software solutions and 3D printing services, through which the Company seeks to form the backbone of the 3D printing industry. Its solutions enable players in a wide variety of industries, including healthcare, automotive, aerospace, art and design, and consumer goods, to build 3D printing applications. The Company operates in the domestic market and worldwide, including Colombia, Brazil, Australia, Malaysia, China, Japan, Austria, Poland, Germany, and France, among others.

Proto Labs, Inc. is an e-commerce driven digital manufacturer of on-demand three dimensional (3D) printed, computer numerical control (CNC) machined and injection-molded custom parts for prototyping and short-run production. Its geographic segments include the United States, Europe, and Japan. It targets its products to the product developers and engineers who use 3D computer-aided design (3D CAD) software to design products across a range of end markets. Its product lines include Injection Molding, CNC Machining, 3D Printing and Sheet metal fabrication. Its Injection Molding product line is used for prototype, on-demand, and short-run production. Its CNC Machining product line uses commercially available CNC machines to cut plastic or metal blocks into one or more custom parts. Its 3D Printing product line includes stereolithography (SL), selective laser sintering (SLS) and direct metal laser sintering (DMLS) processes. It also provides low-volume sheet metal fabrication services.

PTC Inc. is a global computer software and services company. The Company offers a portfolio of computer-aided design (CAD) modelling, product lifecycle management (PLM) and service lifecycle management (SLM) solutions for manufacturers to create, operate, and service products. It offers a suite of Internet of Things (IoT) solutions that enables its customers to connect, manage and analyze data, and create applications. Its segments include the Solutions Group, the IoT Group and Professional Services. The Solutions Group segment includes its CAD, PLM and SLM products. The IoT Group segment includes its IoT, analytics and augmented reality (AR) solutions. The Professional Services segment includes consulting, implementation, and training business.

Stratasys Ltd. is a provider of three dimensional (3D) printing and additive manufacturing (AM) solutions for the creation of parts used in the processes of designing and manufacturing products and for the direct manufacture of end parts. The Company's solutions include products ranging from entry-level desktop 3D printers to systems for rapid prototyping (RP) and production systems for direct digital manufacturing (DDM).

[4] Source: Refinitiv Eikon, Company websites

As of December 31, 2016, it offered 3D printing consumable materials, consisting of 15 fused deposition modelling (FDM), cartridge-based materials, 26 PolyJet cartridge-based materials, five smooth curvature printing (SCP) inkjet-based materials, 158 non-color digital materials, and over 1,500 color variations, as well as its four SolidScape non-toxic thermoplastic modelling materials. The Company's products and services are used in various industries, including aerospace, automotive, consumer electronics, consumer goods, education, dental, jewellery and others.

GEFERTEC is the first and only company worldwide that provides the market with the revolutionary 3DMP® technology that is based on modern arc welding in the form of ready-to-use production machinery. The arc machine series offers perfect manufacturing solutions for metalworking companies as well as for research and development institutions.

MX3D With over 10.000 kg of metal 3D printed objects and over 40 man-years of experience since 2014, MX3D is the company that brought large-scale robotic wire arc additive manufacturing (WAAM) and its market to life and made enabling 3D metal printing more flexible, faster, and cheaper. Now, MX3D is ready to transform the market further by launching the first dedicated robotic WAAM software enabling companies, engineers, and designers to print end-to-end large-scale 3D metal objects in-house.

Amaero International Ltd is an Australia-based company engaged in research, development, manufacture, and sales of laser-based metal additive goods. The Company manufactures components for a range of global companies, and small and medium enterprises (SME) in North America, Europe, Asia, and Australia. It provides a range of additive manufacturing services to customers with a range of service lines, including research and development, design and prototyping, contract manufacturing, tooling, three-dimensional (3D) printing equipment and consumables, training, services and maintenance, and commercializing metal alloys. The Company also provides engineering services.

Aurora Labs Limited is engaged in the design, development, and manufacture of three-dimensional (3D) metal printers and associated products and services. The Company also specializes in the development of printer software and the supply of associated consumable materials. It manufactures two models of small format printers (SFPs): the S-Titanium and S-Titanium Pro. Its SFPs are used in various markets, such as prototyping, jewellery, dental implants and appliances, medical implants, and materials research businesses. Its printers can operate in three modes: Selective Laser Melting (SLM), Selective Laser Sintering (SLS) and Directed Energy Deposition (DED).

Norsk Titanium AS (using a similar Rapid Plasma Deposition WAAM process to Al3) is a supplier of aerospace-grade, additive manufactured, structural titanium components. The company uses its patented Rapid Plasma Deposition™ (RPD™) process that transforms titanium wire into complex components suitable for structural and safety-critical applications. Norsk Titanium is a tier-1 supplier to Boeing and is committed to cost-reducing aerostructures and jet engines for the world's premier aerospace manufacturers. RPD™ is the world's first FAA-approved, 3D-printed, structural titanium, delivering substantial lead-time and cost savings for aerospace, defense, and commercial customers.

Titomic Limited is an Australia-based company. The Company is engaged in developing a new solid-state additive manufacturing process using Cold Spray to produce bulk 3D forms and coatings from powder feed stock that is both metallic and non-metallic. The Company's Titomic Kinetic Fusion technology is focus on industrial scale manufacturing of large size metal parts as well as high volume production of complex shaped parts. In addition, the Company's Commonwealth Scientific and Industrial Research Organization (CSIRO) patent application, which forms part of the Titomic Kinetic Fusion process for complex shaped Titanium load bearing structures. The Company's products include Machines, Powders, Rapid Prototyping. The Company also provides a range of services, such as design to engineering, rapid prototyping, product testing and validation, material lab services, manufacturing modelling, and finishing.

SPEE3D printers enable the most affordable metal additive manufacturing process in the world. They make metal parts the fastest way possible, leveraging metal cold spray technology to produce industrial quality metal parts in just minutes, rather than days or weeks. The process harnesses the power of kinetic energy, rather than relying on high-power lasers and expensive gasses. And for the first time it allows the flexibility of metal 3D printing at normal production costs. Relative to AL3 these are small components and currently limited to copper and aluminium.

Earnings Forecasts

We have based our forecasts on AML3D's growth strategy, ARCEMY® machine price points, customer inquiry and conversion rate and subsequent licensing revenue. Capacity utilisation is assumed to expand in Contract Manufacturing, but production capacity is held constant. We assume a manufacturing capacity expansion between FY22 and FY25. Leveraged growth comes from a slow build in inquiry conversion rate which translates to higher numbers of machine sales. Gross Margin is based on current manufacturing margin for ARCEMY® modules and a manufacturing mark-up on assumed average cost of inputs – I.e., wire and energy.

Upside and Downside cases are driven primarily by:

- Contracting capacity utilisation
- Manufacturing machine numbers
- Contract manufacturing margin
- Customer inquiry and conversion rates
- Choice of machine size
- Machine price inflation
- Margin on consumables supplied and licence fees

Our assumptions leave room for further upside if these variables move favourably over time.

Exhibit 14: RaaS Forecast Assumptions

		Base Case		Downside Case		Upside Case	
Starting Assumptions		**1H22**	**Ch to FY24**	**1H22**	**Ch to FY24**	**1H22**	**Ch to FY24**
Contract Manufacturing							
Arcemy Machine Nos Operating	#	7	16.3%	7	4.6%	8	23.3%
Machine Capacity Utilisation	%	71%	0%	64%	0%	79%	0%
Shift nos	#	1	0%	1	0%	1	0%
Assumed manufacturing margin	%	20%	44%	18%	44%	22%	44%
Charge rate per kg/hr produced	$/kg/hr	$4.85	11.9%	$4.29	10.9%	$5.43	12.8%
Input cost per hour used	$/kg/hr	$4.04	1.7%	$3.63	1.5%	$4.45	1.8%
Input cost inflation	%	1.0%	0%	0.9%	0%	1.1%	0%
Machine Sales							
Customer inquiries/machine/week	#	10	11%	9	11%	11	11%
Time to complete/conversion rate to order	Mths	24	-20.6%	26	-20.6%	22	-20.6%
Machine orders	#	1	108.0%	1	91.3%	2	81.7%
Machine pricing - Medium Size	$	$696,900	1.7%	$696,210	1.5%	$697,590	1.8%
Machine build - Gross Margin	%	60%	0%	60%	0%	60%	0%
Licence Income							
Machines sold in prior year	#	3	0%	3	0%	3	0%
Proportion Medium size supplied	%	50%	0%	50%	0%	50%	0%
Input Volume per machine	kg/day	29	0%	29	0%	29	0%
Machine capacity utilisation	%	71%	0%	71%	0%	71%	0%
Supply Margin	%	10%	0%	10%	0%	10%	0%

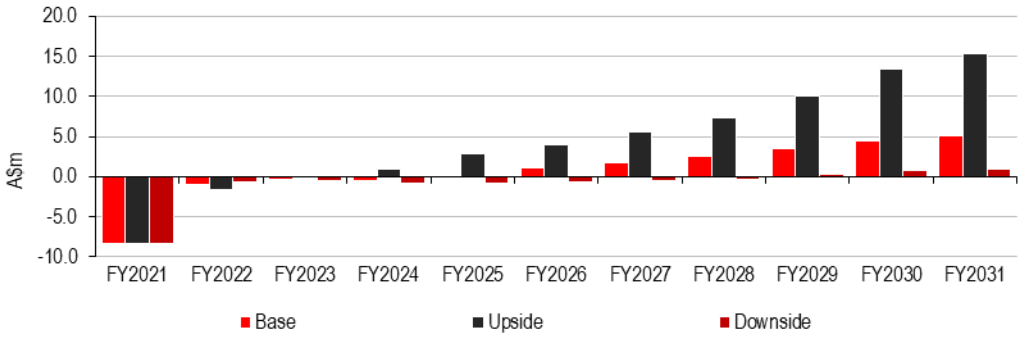
Source: RaaS Estimates

Exhibit 15: Case valuation range

	Base Case	Downside Case	Upside Case
DCF valuation p.s.	$0.475	$0.233	$0.829
DCF valuation $m	$71.452	$35.031	$124.710
Revenue FY22	3.7	3.0	5.9
EBITDA FY22	-3.2	-3.4	-2.4
Revenue FY31	60.6	40.8	92.4
EBITDA FY31	23.2	14.2	37.1
CAGR in Revenue %	32.3%	29.9%	31.7%

Source: RaaS estimates

Exhibit 16: Free Cashflow Cases



Source: RaaS estimates

SWOT Analysis

In our view the strengths and opportunities for Company outweigh the weaknesses and threats.

Exhibit 17: Strengths, Weaknesses, Opportunities, Threats

Strengths	Opportunities
Secure funding	Significant markets in Asia and Australia
Innovative patented technology	High level of inquiry to convert to sales
Large output scale a significant differentiator	The only AM company to deliver at his component scale
Use of normal metal wire inputs lowers costs and eases supply	Continuing R&D drives further acceptance
AL3 can provide design so no special skills necessary	At least three major defence and aerospace firms trialling
Industrial grade operating interface	Pandemic has highlighted the need for flexible onshore manufacturing
Inherent flexibility of operation	Need to reduce dependence on China is driving more diverse manufacturing approaches
Execution of growth plan on track	
Weaknesses	**Threats**
Customers need to satisfy themselves the product is suitable for their own requirements	Competitors attempting to scale up existing processes
Slow conversion due to complexity of supply chains	Two other firms with a chance to deliver similar product advantages
Flexibility and range of industry solutions also may mean customers are unclear as to what AM can deliver	COVID has slowed establishment of Asian presence

Source: RaaS analysis

Key Risks

New Technology

The WAM® technology is challenging traditional and well-tried technologies such as machining and forging. WAM® is a disruptive technology in traditional manufacturing industries where potential users have sunk investment in existing technologies. Awareness-raising of the advantages and value proposition associated with the WAM® technology will be required to educate the market.

Customer Conversion

AML3D is at a paid trial stage with potential contract manufacturing clients. There is no guarantee that any of these paid trial customers will convert into regular customer contracts.

Key Personnel

The technology and the development of the ARCEMY® 3D printing modules is largely due to the experience of the CEO and ALM3D's Technical Engineering Team.

Research & Development

ALM3D's products and technology are the subject of continuous research and development. Further development will likely be needed to enable the company to remain competitive, increase sales and improve the scalability of products and technology. It is uncertain that the company will be able to undertake such research and development successfully.

International Operations

AML3D intends to develop operations in Singapore including the establishment of the Singapore Contract Manufacturing Centre. This represents the company's first international operation. There is risk that its execution may not result in the intended outcome from the investment.

Intellectual Property

The company is in the early stages of protecting its process improvements through patents. Patent applications for its wire arc additive manufacturing process have been submitted (and have been successful in Australia). The prospect of attaining additional patent protection for products and technology is uncertain.

Board and management

Directors

Stephen Gerlach AM – Chairman

Mr Gerlach is a company director and corporate advisor. He is Chancellor of Flinders University. He is also the Chairman of Adelaide Capital Partners Pty Ltd, Gerlach Asset Development Pty Ltd, Ebony Energy Ltd and a Director of Beston Global Foods Ltd and Beston Pacific Asset Management Pty Ltd. He was formerly the Chairman of Santos Limited, Futuris Corporation Ltd (subsequently known as Elders Ltd), Equatorial Mining Ltd, Elders Australia Ltd, Challenger Listed Investments Limited, Amdel Ltd, and Penrice Ltd. Stephen was a partner of the Adelaide legal firm Finlaysons for 23 years and its Managing Partner from 1985 to 1991.

Andrew Sales MEng, MSc, CEng, CMatP - Managing Director

Mr Sales is a Chartered Engineer with a Master of Engineering and Master of Science. He is an expert in welding technology with 30 years of global experience. He has held varying roles across upper management and senior leadership within the oil and gas, resources, and mining sectors as well as advanced manufacturing, heavy engineering and fabrication. He is also the author of numerous technical papers in the field of welding high strength corrosion resistant alloys. Mr Sales qualifications also include a Diploma in Quality Management and Auditing. He is a Chartered Engineer through ECUK and TWI (UK), a professional member of Materials Australia holding a CMatP, and sits on two Standards Australia committees including the newly established committee for Additive Manufacturing. Andrew founded AML Technologies in 2014 and has been Managing Director since that time.

Kevin Reid FCA GAICD - Non-Executive Director, Chairman of Audit & Risk Committee

Mr Reid is a Chartered Accountant with 24 years' experience as a partner with PwC and BDO practicing as an assurance specialist. He has experience with a wide range of listed companies including as an independent accountant for initial public offers, capital raisings and acquisitions and has extensive commercial and corporate experience as a company director and professional practice board member. He is Chair of MPH Architects and deputy chair of Can:Do Group, a director of ACH Group Inc, Meals on Wheels (South Australia) and the Maggie Beer Foundation. He is a member of the Audit & Risk committee for the Office of the National Rail Safety Regulator.

Sean Ebert BEng, Hons (Electrical), GAICD, MBA - Executive Director

Mr Ebert has 25 years of executive and board level experience across public and commercial sectors with experience within the engineering sectors of oil and gas, mining and resources and emerging technologies in Australia, Middle East, South America, US, and Europe. He was previously the CEO of Beston Pacific Asset Management, Global Director M&A of WorleyParsons, CEO of Camms Pty Ltd and CEO Camms Profit Impact Pty Ltd. During the ALM3D IPO period Mr Ebert also acted as an adviser to the company.

Leonard Piro - Non-Executive Director, Member of Audit & Risk Committee

Mr Piro is the former Deputy Chief Executive of the SA Department of Trade and Economic Development, Executive Director Manufacturing and Chief Executive Automotive Industry Transformation Taskforce and Group Executive Director and Chairman of the Tonsley Re-development. He has had exposure to manufacturing trends and strategies in Europe and the US. The Board considers that Mr Piro is an independent Director.

Management

Andrew Sales, CEO, see above.

Christine Manuel, BMus, GradDipACG, DipCD, DipInvRel, FGIA, FCG (CS, CGP), MAICD, MAITD, AAIPM - Company Secretary

Ms Manuel is an experienced Company Secretary and corporate governance professional and has held Company Secretary and executive roles in a range of listed and unlisted entities over more than 20 years. She was formerly Company Secretary of Santos Group companies and People's Choice Credit Union and is currently Company Secretary of ASX listed Angel Seafood Holdings Ltd. She is Vice-President of the Board and past SA/NT State Council Chair of the Governance Institute of Australia.

Hamish McEwin - Chief Financial Officer (CFO).

Mr McEwin has over 25 years of experience within accounting, finance, and senior management roles. A Chartered Accountant, Mr McEwin is an experienced CFO with relevant industry and ASX experience. His most recent role was as CFO at ASX-listed manufacturing company Legend Corporation Limited. Prior to his 12 years at Legend Corporation, Mr McEwin held positions as Senior Manager Audit and Assurance Services at Grant Thornton and Associate Director Audit and Corporate Advisory at Hayes Knight.

Exhibit 18: Financial Summary

AML3D Ltd (ASX:AL3)					
Profit and Loss (A$m)					
Y/E 30 June	**FY19A**	**FY20A**	**FY21A**	**FY22F**	**FY23F**
Sales Revenue	0.2	0.3	0.6	3.7	7.7
Gross Profit	0.2	0.2	0.3	1.2	3.1
EBITDA	(0.6)	(3.2)	(5.5)	(3.2)	(1.4)
Depn	(0.1)	(0.1)	(0.4)	(0.8)	(0.7)
Amort	0.0	0.0	0.0	(0.0)	(0.2)
EBIT	(0.7)	(3.2)	(5.9)	(4.0)	(2.3)
Interest	0.0	0.0	0.0	0.0	(0.0)
Tax	0.0	0.0	0.0	1.2	0.7
Minorities	0.0	0.0	0.0	0.0	0.0
Equity accounted assoc	0.0	0.0	0.0	0.0	0.0
NPAT pre significant item	(0.7)	(3.2)	(5.8)	(2.8)	(1.6)
Significant items	0.0	0.1	0.2	0.0	0.0
NPAT (reported)	**(0.7)**	**(3.1)**	**(5.7)**	**(2.8)**	**(1.6)**
Cash flow (A$m)					
Y/E 30 June	**FY19A**	**FY20A**	**FY21A**	**FY22F**	**FY23F**
EBITDA	(0.6)	(3.2)	(5.5)	(3.2)	(1.4)
Interest	0.0	0.0	0.0	0.0	(0.0)
Tax	0.0	0.0	0.0	0.0	0.0
Working capital changes	(0.3)	0.6	(0.9)	0.9	(0.7)
Operating cash flow	(0.9)	(2.6)	(6.3)	(2.2)	(2.2)
Mtce capex	(0.2)	(0.8)	(0.3)	(0.4)	(0.4)
Free cash flow	(1.1)	(3.4)	(6.6)	(2.6)	(2.6)
Growth capex	(0.0)	(0.0)	(2.3)	(1.4)	(1.4)
Acquisitions/Disposals	0.0	0.0	0.0	0.0	0.0
Other	0.0	(0.0)	0.0	0.0	0.0
Cash flow pre financing	(1.2)	(3.5)	(8.9)	(4.0)	(4.0)
Equity	0.1	10.2	7.3	0.0	0.0
Debt	1.6	(0.1)	(0.1)	0.0	0.0
Dividends paid	0.0	0.0	0.0	0.0	0.0
Net cash flow for year	0.5	6.7	(1.7)	(4.0)	(4.0)
Balance sheet (A$m)					
Y/E 30 June	**FY19A**	**FY20A**	**FY21A**	**FY22F**	**FY23F**
Cash	1.2	8.2	7.3	3.2	(0.8)
Accounts receivable	0.3	0.7	0.5	0.3	0.6
Inventory	0.0	0.1	2.0	0.6	1.2
Other current assets	0.0	0.2	0.2	0.2	0.2
Total current assets	*1.5*	*9.3*	*10.0*	*4.4*	*1.2*
PPE	0.3	1.5	3.3	2.9	2.6
Intangibles and Goodwill	0.0	0.0	0.1	1.4	2.7
Investments	0.0	0.0	0.0	0.0	0.0
Deferred tax asset	0.0	0.0	0.0	1.2	1.9
Other non current assets	0.0	0.0	0.0	0.1	0.1
Total non current assets	*0.4*	*1.6*	*3.4*	*5.6*	*7.3*
Total Assets	1.8	10.9	13.4	9.9	8.5
Accounts payable	0.1	0.8	0.9	0.2	0.4
Short term debt	1.8	0.1	0.2	0.2	0.2
Tax payable	0.0	0.0	0.0	0.0	0.0
Other current liabilities	0.1	0.0	0.5	0.5	0.5
Total current liabilities	*1.9*	*0.9*	*1.5*	*0.8*	*1.0*
Long term debt	0.0	0.3	0.4	0.4	0.4
Other non current liabs	0.0	0.0	0.0	0.0	0.0
Total long term liabilities	*0.0*	*0.3*	*0.4*	*0.4*	*0.4*
Total Liabilities	1.9	1.2	1.9	1.2	1.4
Net Assets	**(0.1)**	**9.7**	**11.5**	**8.7**	**7.1**
Share capital	1.1	14.0	21.3	21.3	21.3
Accumulated profits/losse	0.0	(4.3)	(9.8)	(12.6)	(14.2)
Reserves	(1.2)	0.0	0.0	0.0	0.0
Minorities	0.0	0.0	0.0	0.0	0.0
Total Shareholder func	**(0.1)**	**9.7**	**11.5**	**8.7**	**7.1**

Share price	12/10/2021				A$	0.145
Interim (A$m)	**1H20 A**	**2H20 A**	**1H21 A**	**2H21 A**	**1H22 E**	**2H22 E**
Revenue	0.1	0.2	0.1	0.5	1.7	1.9
EBITDA	(1.8)	(1.3)	(2.1)	(3.3)	(1.6)	(1.5)
EBIT	(1.8)	(1.3)	(2.3)	(3.5)	(2.0)	(2.0)
NPAT (normalised)	(1.8)	(1.3)	(2.2)	(3.5)	(1.4)	(1.4)
Minorities	-	-	-	-	-	-
NPAT (reported)	(1.8)	(1.1)	(2.1)	(3.5)	(1.4)	(1.4)
EPS (normalised)	(1.24)	(1.10)	(1.47)	(2.17)	(0.86)	(0.83)
EPS (reported)	(1.39)	(0.85)	(1.43)	(2.30)	(0.94)	(0.91)
Dividend (cps)	-	-	-	-	-	-
Imputation	30.0	30.0	30.0	30.0	30.0	30.0
Operating cash flow	(0.8)	(1.8)	(1.9)	(4.4)	(0.3)	(1.9)
Free Cash flow	(0.7)	(1.1)	0.4	(4.1)	0.4	(0.8)
Divisions	**1H20 A**	**2H20 A**	**1H21 A**	**2H21 A**	**1H22 E**	**2H22 E**
Contract Manufacturing	0.0	0.0	0.0	0.0	0.7	0.8
Machine Sales	0.0	0.0	0.0	0.0	0.7	0.7
Licence Income	0.0	0.0	0.0	0.0	0.3	0.4
COGS	0.0	0.0	0.0	0.0	(1.2)	(1.3)
Employment	0.0	0.0	0.0	0.0	(1.6)	(1.6)
Technology, licence fees	0.0	0.0	0.0	0.0	0.0	0.0
Other costs	0.0	0.0	(2.4)	(4.0)	(0.6)	(0.6)
EBITDA	(1.8)	(1.3)	(2.1)	(3.3)	(1.6)	(1.5)

Margins, Leverage, Returns		**FY19A**	**FY20A**	**FY21A**	**FY22F**	**FY23F**
EBITDA		n.a.	n.a.	n.a.	n.a.	n.a.
EBIT		n.a.	n.a.	n.a.	n.a.	n.a.
NPAT pre significant items		n.a.	n.a.	n.a.	n.a.	n.a.
Net Debt (Cash)		(0.6)	7.8	6.7	2.7	(1.3)
Net debt/EBITDA (x)	(x)	n/a	n/a	n/a	n/a	n/a
ND/ND+Equity (%)	(%)	125%	(411%)	(140%)	(44%)	15.8%
EBIT interest cover (x)	(x)	n/a	n/a	n/a	n/a	n/a
ROA		n.a.	n.a.	n.a.	n.a.	n.a.
ROE		n.a.	n.a.	n.a.	n.a.	n.a.
ROIC		n.a.	n.a.	n.a.	n.a.	n.a.
NTA (per share)		n/a	0.07	0.08	0.05	0.03
Working capital		0.2	0.0	1.7	0.7	1.4
WC/Sales (%)		105%	17%	259%	20%	18%
Revenue growth		(35%)	45%	121%	475%	110%
EBIT growth pa		n/a	n/a	n/a	n/a	n/a
Pricing		**FY19A**	**FY20A**	**FY21A**	**FY22F**	**FY23F**
No of shares (y/e)	(m)	132	148	150	150	150
Weighted Av Dil Shares	(m)	132	148	148	165	165
EPS Reported	cps	0.0	0.0	(3.4)	(1.7)	(1.0)
EPS Normalised/Diluted	cps	0.0	0.0	(3.6)	(1.7)	(1.0)
EPS growth (norm/dil)		n.a.	n.a.	n.a.	-54%	-42%
DPS	cps	-	-	-	-	-
DPS Growth		n.a.	n.a.	n.a.	n.a.	n.a.
Dividend yield		0.0%	0.0%	0.0%	0.0%	0.0%
Dividend imputation		30	30	30	30	30
PE (x)		n.a.	n.a.	-4.2	-8.6	-14.7
PE market		17.8	17.8	17.8	17.8	17.8
Premium/(discount)		n.a.	n.a.	(124%)	(148%)	(183%)
EV/EBITDA		-30.1	-4.3	-2.8	-6.0	-16.2
FCF/Share	cps	-0.6	-1.2	-4.0	-1.2	-1.1
Price/FCF share		-25.9	-12.3	-3.6	-12.2	-12.7
Free Cash flow Yield		(3.9%)	(8.1%)	(27.4%)	(8.2%)	(7.9%)

Source: RaaS estimates

FINANCIAL SERVICES GUIDE

RaaS Advisory Pty Ltd

ABN 99 614 783 363

Corporate Authorised Representative, number 1248415

of

BR SECURITIES AUSTRALIA PTY LTD

ABN 92 168 734 530

AFSL 456663

Effective Date: 6th May 2021

About Us

BR Securities Australia Pty Ltd (BR) is the holder of Australian Financial Services License ("AFSL") number 456663. RaaS Advisory Pty Ltd (RaaS) is an Authorised Representative (number 1248415) of BR.

This Financial Service Guide (FSG) is designed to assist you in deciding whether to use RaaS's services and includes such things as

- who we are
- our services
- how we transact with you
- how we are paid, and
- complaint processes

Contact Details, BR and RaaS

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P: +61 414 354712

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RaaS is the entity providing the authorised AFSL services to you as a retail or wholesale client.

What Financial Services are we authorised to provide? RaaS is authorised to

- provide general advice to retail and wholesale clients in relation to
  - Securities
- deal on behalf of retail and wholesale clients in relation to
  - Securities

The distribution of this FSG by RaaS is authorized by BR.

Our general advice service

Please note that any advice given by RaaS is general advice, as the information or advice given will not take into account your particular objectives, financial situation or needs. You should, before acting on the advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Prospectus, Product Disclosure Statement or like instrument. As we only provide general advice we will not be providing a Statement of Advice. We will provide you with recommendations on securities

Our dealing service

RaaS can arrange for you to invest in securities issued under a prospectus by firstly sending you the offer document and then assisting you fill out the application from if needed.

How are we paid?

RaaS earns fees for producing research reports. Sometimes these fees are from companies for producing research reports and/or a financial model. When the fee is derived from a company, this is clearly highlighted on the front page of the report and in the disclaimers and disclosures section of the report.

We may also receive a fee for our dealing service, from the company issuing the securities.

Associations and Relationships

BR, RaaS, its directors and related parties have no associations or relationships with any product issuers other than when advising retail clients to invest in managed funds when the managers of these funds may also be clients of BR. RaaS's representatives may from time to time deal in or otherwise have a financial interest in financial products recommended to you but any material ownership will be disclosed to you when relevant advice is provided.

Complaints

If you have a complaint about our service you should contact your representative and tell them about your complaint. The representative will follow BR's internal dispute resolution policy, which includes sending you a copy of the policy when required to. If you aren't satisfied with an outcome, you may contact AFCA, see below.

BR is a member of the Australian Financial Complaints Authority (AFCA). AFCA provide fair and independent financial services complaint resolution that is free to consumers.

Website: www.afca.org.au; Email: info@afca.org.au; Telephone: 1800931678 (free call)

In writing to: Australian Financial Complaints Authority, GPO Box 3, Melbourne, VIC, 3001.

Professional Indemnity Insurance

BR has in place Professional Indemnity Insurance which satisfies the requirements for compensation under s912B of the Corporations Act and that covers our authorized representatives.

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Assessment of risk can be subjective. Portfolios of equity investments need to be well diversified and the risk appropriate for the investor. Equity investments in listed or unlisted companies yet to achieve a profit or with an equity value less than $50 million should collectively be a small component of a balanced portfolio, with smaller individual investment sizes than otherwise.

The science of climate change is common knowledge and its impacts may damage the global economy. Mitigating climate change may also disrupt the global economy. Investors need to make their own assessments and we disclaim any liability for the impact of either climate change or mitigating strategies on any investment we recommend.

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