RaaS
Research as a Service

Amaero International Ltd

Positioning Paper

Delivering efficiencies in 3D printing

Additive Manufacturing

2nd February 2021

Amaero International Ltd (ASX:3DA) creates large format, complex components in metal with laser-based additive manufacturing for the defence, aerospace and automotive sectors. The company, formed in 2013 out of Monash University and listed on the ASX in December 2019, works with several of the world's leading manufacturers of aerospace and defence products, delivering both design & prototype and manufacturing capability. In our view Amaero is well positioned to capitalise on the global shift towards additive manufacturing to secure efficiencies in high-value, low run manufacturing processes. We initiate coverage with a base case DCF-derived valuation of $179m (42% upside on current market capitalisation) and see considerable upside from 3DA's partnerships with US defence primes to develop an Australian titanium powder manufacturing facility, a 3D printing centre in the Middle East and for an extended relationship with Fletcher Insulation's global network.

Business model

Amaero generates revenue from several sources including the design and prototyping of additive manufacturing solutions on a cost-plus basis; from contract manufacturing and tooling on a price per unit basis; from the sale of proprietary metal 3D printers & equipment and 3D printing metal powders on a cost plus mark-up basis; from post-sales support and maintenance service fees; and from the rights to commercialise patented proprietary alloys developed by Monash University on a price per unit basis. Amaero has the North American commercialisation rights to a range of 3D printing machines, including the world's largest laser powder bed machine, as well as the powder preparation machines and powder handling and recovery devices. The company owns fully accredited manufacturing facilities in Melbourne, Adelaide and El Segundo, California.

2021 will be a formative year

Amaero enters calendar 2021 with several well-advanced projects and prospects including a purchase order from Boeing for the manufacture of evaluation parts, which is expected to lead to an expanded term engagement for the manufacture of components for Boeing's defence and space divisions; the tooling agreement with Fletcher Insulation which will likely result in Amaero producing a specialist, frequently replaced tool used in making glass fibre insulation initially addressing the local market before expanding to other key target markets globally; the opportunity to supply and manage a proposed 3D printing centre in the Middle East and the chance to develop and operate an Australian titanium powder manufacturing facility. The company has also had some recent contract wins with Nissan and Raytheon.

Base case DCF valuation is $179m

We have used the discounted cashflow methodology to value Amaero using a WACC of 13.9% (beta 1.9, terminal growth rate of 2.2%) and this derives an equity value of $179m or $0.90/share on the current share count of 197.6m shares. Note that our modelling anticipates additional capital will need to be raised, resulting in additional shares issued. Valuing early stage companies is always a subjective exercise, particularly when the timing of projects and financing is uncertain. We have sought to apply conservative estimates in our modelling and our base forecasts and valuation focus on announced agreements. We have also modelled but not included earnings estimates for global extension of the Fletcher Insulation tooling opportunity, the proposed Australian titanium manufacturing facility and the proposed US$77m Middle East 3D printing centre. These projects potentially add considerable upside to our earnings forecasts and valuation, and are discussed in this report.

Historical earnings and RaaS forecasts

Y/E	Total Revenue*	Gross Profit (A$m)	EBITDA (A$m)	NPAT (A$m)	EPS (c)	EV/Sales (x)
06/20a	0.1	0.0	(4.2)	(4.8)	(3.4)	nm
06/21e	3.3	1.1	(5.9)	(6.8)	(3.6)	39.5
06/22e	20.0	5.6	(2.3)	(3.6)	(1.7)	6.5
06/23e	55.3	22.1	13.5	11.7	5.0	2.2

Source: Company data for historical, RaaS estimates for FY21e, FY22e and FY23e *inc R&D grants

Share details

ASX Code	3DA
Share Price (1 Feb 2021)	$0.63
Market Capitalisation	$124.5M
Shares on issue	197.6M
Net cash post SPP	$13.825M
Free float	~55%

Share performance (12 months)

Upside Case

- Counts six of the top 10 defence companies as clients
- Partnered with the world's foremost additive manufacturing R&D team at Monash University
- Strong board and advisory board with links into the decisionmakers in US and EMEA defence

Downside Case

- Competing with multinational 3D printing manufacturers with big balance sheets
- Further capital raises likely, resulting in potential dilution
- Still early stage with no guarantee that strategy will translate into earnings success

Catalysts

- Australian titanium powder plant proceeds
- Patents over aluminium and titanium alloys granted
- Decision on 3D printing centre in Middle East

Board of directors

David Hanna	Non-Executive Chairman
Stuart Douglas	Executive Director
Kathryn Presser	Non-Executive Director

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Research as a Service

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Research as a Service

Amaero International Ltd

Amaero International Ltd manufactures large format, complex components in metal with laser-based additive manufacturing (also known as 3D printing) processes. The company has operations in both Australia, in Adelaide and Melbourne, and in the US, in El Segundo, California. The company was established in 2013 with support from Monash University to commercialise opportunities identified by the Monash Centre for Additive Manufacturing. Since its formation, Amaero has worked with many of the world's leading aerospace and defence manufacturers in both a research and development and manufacturing capacity, delivering critical components for the defence, aerospace and tooling sectors.

Investment case

In our view, Amaero International has the opportunity to achieve success for the following reasons:

- Amaero is closely aligned with, and counts as, one of its top three shareholders, Monash University, one of the world's foremost research institutions in additive manufacturing;
- The company also has a collaborative research relationship with the University of Adelaide and has forged a research JV with Deakin University and PPK Group Ltd to develop a next generation high performance alloys incorporating nanoparticles;
- Amaero has already qualified as an approved supplier for many of its target clients and numbers among its clients six of the 10 largest defence manufacturers and a global auto parts manufacturer;
- The company's advisory board includes the former Australian Federal Minister for Defence and the former US Acting Secretary of Defence, giving Amaero an edge over other companies at a similar stage in their lifecycle, helping it to identify the decisionmakers for securing new opportunities;
- To the point above, Amaero is now positioned to become the operator of a US$77m 3D printing facility in the Middle East which will be built as part of a defence prime's offset obligations;
- The company is also positioned to develop an Australian titanium powder manufacturing facility to support US defence prime contractors;
- We see these two projects delivering considerable upside to Amaero;
- Amaero holds significant IP including the commercialisation rights to two patented and proprietary alloys developed by Monash University;
- It also holds the exclusive distribution rights in North America to AmPro's 3D printers and ancillary equipment range and has developed significant intellectual property around these products including operating manuals, procedures and knowhow;
- Amaero has developed a significant footprint in the US with the commissioning of its El Segundo, California facility which has led to purchase orders from Boeing for the manufacture of evaluation parts, which potentially will lead to an expanded term engagement for the manufacture of components for Boeing's defence and space divisions;
- The Boeing order is one of several key contracts Amaero has secured in the past 12 months and underscores the opportunity that the company has to capitalise on the global shift towards additive manufacturing to secure efficiencies in high-value, low run manufacturing processes and high performance optimised components that can only be 3D printed.

DCF valuation of $179m, considerable upside in new projects

In our view, the discounted cashflow methodology is the most appropriate method for valuing Amaero given it is an early stage company. We have applied a WACC of 13.9% (beta 1.9, terminal growth rate 2.2%) to capture the high risk/high return nature of the investment. This derives a base valuation of $179m. This represents 42% upside from the current market capitalisation. On the current share count of 197.6m, the valuation is $0.90/share. Our forecasts do anticipate that additional capital will need to be raised and that this will result in additional shares being issued. Our base case DCF valuation assumes a compound annual

growth rate in free cashflows of 14% from 2024-2030. We have also modelled but not included the potential for expansion of the Fletcher Insulation tooling agreement to its global network **(project 1)**, the proposed US$77m Middle East 3D printing facility **(project 2)** and the not-yet-contracted proposed Australian titanium powder manufacturing facility **(project 3)**, which combined could take our base case valuation to $1.167b which equates to $5.86/share on the current share count. Again our forecasts incorporate an expectation that additional capital will be required resulting in additional shares being issued. This is all very subjective and dependent on the projects getting underway, timing, funding and final detail but the exercise demonstrates that there is potential upside from Amaero's current business.

We set out the impact of these projects on the valuation in the following table.

Exhibit 1: Base case valuation with scenario impact of proposed projects on valuation

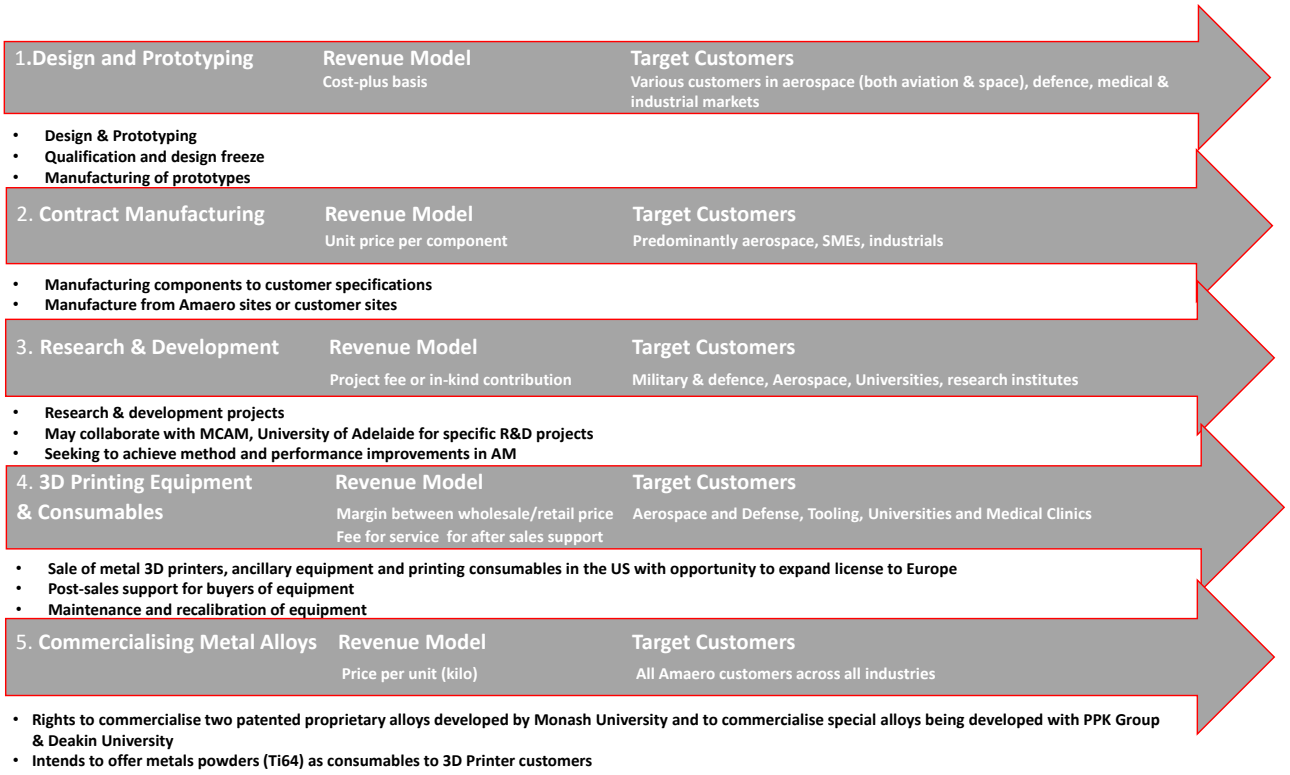
	Base	Base with Project 1	Base with Project 2	Base with Project 3	Base with Projects 1, 2 & 3
DCF Valuation $m	179	265	269	991	1,167
DCF valuation on **current share count of 197.6M shares***	$0.90	$1.33	$1.35	$4.97	$5.86

Source: RaaS estimates *note that additional capital will be required for projects, potentially resulting in additional shares being issued

Business Model

Amaero is an early stage company which to date has generated most of its revenues from providing bespoke solutions and services to its clients, predominantly in the form of component sales. The company is aiming to expand its revenue streams from several services and industries so as to generate both transactional and recurring revenue. We set out in the following exhibit the company's current and target revenue streams.

Exhibit 2: Amaero's business lines and revenue model



Source: Company presentations, RaaS analysis

Currently Amaero generates much of its revenue from the first two business lines depicted above, from design & prototyping and from contract manufacturing but in the year since listing, it has positioned its operations to target metal 3D printing equipment sales through the establishment of its El Segundo, California manufacturing facility and showroom and the advancement of the proprietary aluminium and titanium alloys to final patent stage. The company's growing relationship with defence primes, which has been assisted by its advisory board, has also positioned Amaero to be the operator of an Australian titanium powder facility to service the US defence manufacturing service. We have dimensioned this opportunity in our modelling but have not yet included it in our forecasts.

Amaero's distribution agreement with AmPro Innovations, a company established by Professor Xinhua Wu, Pro Vice Chancellor Monash Precinct and former director of the Monash Centre for Additive Manufacturing, gives the company exclusive rights to sell the SP series of 3D printers and ancillary equipment in the North American market. SP Series printers are Laser Powder Bed Fusion machines that deliver high performance metal components suitable for use in aviation, defence, tooling and auto racing applications. Amaero chose these machines because they are safer to operate combined with high efficiency and low capital costs.

At present there are four metal 3D printers in the range with a fifth, and largest, the SP-800 scheduled to be available early in 2021. The SP-800 will address the large build volume capacity segment of the market with a build chamber size larger than 800 x 400 x 500 mm (which is currently the largest Laser Powder Bed fusion build volume available). In addition to the printers, Amaero sells a range of ancillary equipment for the safe retrieval and removal of metal powders including a residual powder retrieval glove box, a powder decanting machine, silo storage for metal powders, bulk powder removal, and powder sieving machines.

Exhibit 3: Amaero's range of 3D printers

Source: Company website

Technology stack

Amaero has a sizeable IP register, assisted by its rights to commercialise Monash University's proprietary alloys and its exclusive rights to commercially exploit the AmPro range of 3D printing machines and ancillary equipment and their embodied patents in North America, with further option to extend the exclusivity to the European market subject to performance milestones Amaero has developed a considerable technology stack around these machines including operations manuals, and software and hardware upgrades. The alloys are both in the final stages of securing worldwide patents:

- Amaero's new high performance aluminium alloy (called Amaero HOT Al), with scandium which provides a higher increment of tensile strength per atomic percent than any other alloying element when added to aluminium. Amaero HOT Al is stable up to temperatures of 260°C for prolonged periods (versus current aluminium alloys' topping out at 160°C)and can be directly aged (age hardening heat treatment) after 3D printing, to yield superior strength and durability. This alloy will have particular appeal to the aerospace sector as it delivers greater durability at a fraction of the weight of steel;
- Amaero also holds the exclusive licence to a high-strength titanium alloy developed by Monash University which is in the final stages of securing a patent over the alloy. Amaero Beta Ti is a heat treatable alloy that achieves ultra-high strength and fatigue performance and its around 30% stronger than current titanium alloys in use. Amaero expect the new alloy to be used for conventional high volume manufacturing such as extrusion, forging and casting in the aviation, defence and space industries as well as 3D printing. The global Ti alloy market at US$5.4b represents a significant opportunity for this new best in class alloy.

Amaero also has forged a joint venture with Deakin University and PPK Group (ASX:PPK) to develop next generation super strength alloys incorporating in their formulation Boron Nitride Nanotubes (BNNT), which act as a nano-reinforcement in certain metals, significantly improving mechanical properties, thermal resistance and potentially radiation shielding. The alloys are likely to have particular appeal to the aerospace and defence sectors which are continually seeking materials that are more durable, lighter and stronger. Amaero owns 45% of the company created to develop these advanced materials with early properties performance results expected Q1 2021. The company has also amassed considerable knowhow around creating greater efficiencies and reducing costs in the production of titanium alloy powder which we expect the company to deploy in an Australian titanium powder facility to support US defence primes now that its recent capital raise has been successfully completed.

Company History and Timeline

Amaero was formed out the Monash Centre for Additive Manufacturing to commercialise opportunities developed at the centre. The company's development has accelerated since mid-2019 when it undertook a $2m pre-IPO equity raising round and established its operations in the US. We set out the company's timeline in the following exhibit.

Exhibit 4: Historical timeline of events

Year	Event
Jan-10	Monash Centre for Additive Manufacturing formed; EOS M280 and Trumpf Trucell commissioned by Monash University
Feb-12	Concept Laser 1000R Xline commissioned by Monash University
Dec-13	Amaero Engineering formed
Feb-15	Manufactured the world's first 3D printed jet engine (for Safran)
Jan-16	Revised collaboration agreement with the Monash Centre for Additive Manufacturing including mutual access to staff and 3D printing equipment
Mar-16	Achieved ISO9001 accreditation
Nov-16	Amaero, Monash and Safran Power Units announce a collaboration agreement to 3D print jet engine components
Jan-17	Concept Laser Xline 2000R commissioned by Monash University
Mar-17	First production order delivered to a major Australian aviation operator for flying parts
Jun-17	Successfully manufactures a 3D printed Aerospike rocket engine in conjunction with Monash and Woodside Energy
Nov-17	Amaero completes 3D printing of a durability test component geqrbox to Boeing for the AH-64 Apache Helicopter
Mar-18	3D manufactures jet turbine critical parts for the high temperature components of a jet turbine engine
Jun-18	AmPro mark II prototype commissioned, Next generation alloys development commenced
Dec-18	Commenced planned expansion and capital raising activities, Innovyz engages
Aug-19	AM Aero Inc (USA) established, $2m pre-IPO equity raise completed
Sep-19	Amaero's LA facility leased
Oct-19	Amaero's Adelaide facility established; company signs several material agreements including the strategic partnership agreement with University of Adelaide, the research services agreement and intellectual property licence agreements with Monash University, and the distribution agreement with AmPro Innovations Pty Ltd.
Dec-19	Amaero lists on ASX, raising $8m at $0.20/share David Carbon joins advisory board
Feb-20	Former Acting Secretary of Defense for USA, Patrick Shanahan joins advisory board
Apr-20	Development agreement with auto manufacturer for AM tooling, Amaero commissions SP500 and SP100 machines
May-20	Forges research agreement with Fletcher Insulation, new Titanium Alloy Patent enters final phase for approval, Commencement of qualification statement of work for one of world's largest aero manufacturers on EOSM400
Jun-20	International patent application for High Operating Temperature (HOT) Aluminium Alloy enters final stage of approval
Jul-20	Amaero's El Segundo facility secured AS9100 Aerospace Certification
Aug-20	Amaero receives a Purchase Order from Gilmour Space Technologies for the manufacture of two rocket motor components; Secures a Purchase Order from Samvardhana Motherson Reflectec("SMR") for the supply of prototype automotive mirror components for a next generation SUV for one of the Big Three automobile manufacturers.
Sep-20	Launches additional machines, SP260 and SP400 and additional powder handling ancillary equipment
Nov-20	Forges a JV with Deakin University and PPK Group (ASX:PPK) to develop a super strength aluminium alloy
Dec-20	Hon. Christopher Pyne, former Australian Defence Minister joins advisory board, Ken Davis appointed Head of North American operations, Amaero enters into a teaming agreement with MEMKO Aviation Aerospace Defence Pty Ltd; Amaero secured a purchase order from Boeing for the manufacture of evaluation parts, which potentially will lead to an expanded term engagement for the manufacture of components for Boeing's defence and space divisions; and on the back of this purchase order raised $9m at $0.55/share, in an substantially oversubscribed issue with an additional $3m being made available to existing shareholders through a Share Purchase Plan (SPP).
Jan-21	Company completes SPP which is heavily oversubscribed (to $4.325m) and take the oversubscriptions plus $500k underwritten by PPK Group to raise an additional $4.825m to fund its growth strategy; Amaero receives a purchase order from Nissan Casting Australia for the supply of tool steel inserts for die-casting engine components; the company receives a purchase order agreement from Raytheon Intelligence and Space whereby Amaero and Raytheon will collaborate on the development of additive manufactured components in new materials.

Source: Company announcements

Clients and partners secured

We have discussed some of the partnerships that Amaero has formed through the development of its technology stack. For a company at its current lifecycle stage, Amaero has secured a blue-chip client base in the defence, aerospace and industrial sectors as well as partnered with the leading research institutions focused on additive manufacturing.

Exhibit 5: Amaero's customers and partners

Source: Company data, RaaS analysis

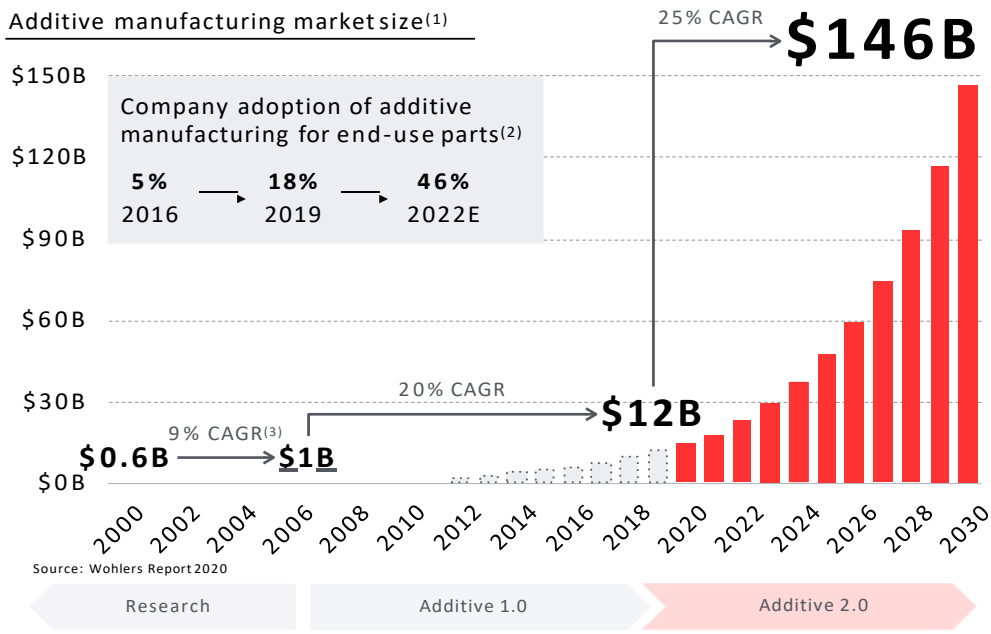
What is additive manufacturing?

Additive manufacturing (AM) commonly known as 3D printing is a digital manufacturing or computer controlled process that creates three dimensional objects by depositing materials, usually in layers, to create a three dimensional object. The 3D printer takes designs created by computer aided design (CAD) software and converted into a .STL file which it then slices into cross sections and builds using materials such as plastics, thermoplastics and metals. AM is different to traditional subtractive manufacturing processes which machine down a block of material to create the product.

The Global Additive Manufacturing Market

The global additive manufacturing market generated US$11.9b in revenues in 2019, was forecasted by acknowledged industry expert, Wohlers Associates, to grow to US$15.8b in 2020 and at a CAGR of 25% for the remainder of the decade. This CAGR extrapolated infers that the sector will generate US$146b by 2030, a growth rate of 11x the 2019 market. The industry grew at a compound annual growth rate (CAGR) of 26% from 2013 to 2019 driven initially by designers and manufacturers using to 3D printing to create prototypes and for research and development but acceleration began in 2019 when new players, largely funded by venture capital funds, began to drive advances in speed, accuracy and material variety in the additive manufacturing sector. Wohlers forecasts align closely with other industry forecasts, which according to 3D Hubs, *The 3D Printing Trends Report 2019*, range from 18.2% to 27.2% for the period to 2024. We have utilised a chart published by Desktop Metal (NYSE:DM) in its pre-listing presentation in August 2020 as it fully demonstrates the shift in this industry. Desktop Metal took Wohlers' forecast for 2029, released in its April 2020 report, and extrapolated the CAGR to calculate 2030.

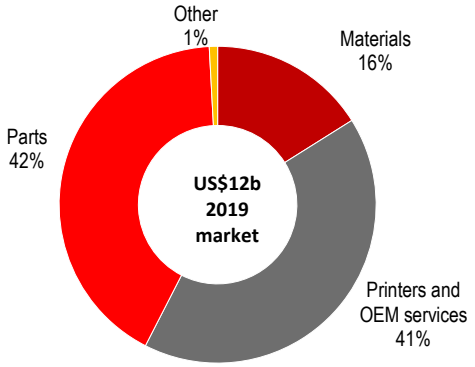
Exhibit 6: Additive manufacturing industry to grow 11x over next decade



Source: Desktop Metal August 2020 presentation (slide 8), (1) quotes Wohlers 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?"

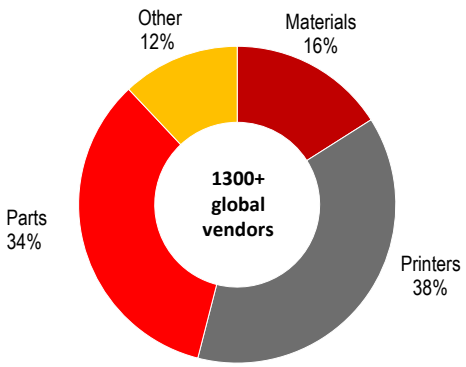
Desktop Metal's August 2020 presentation also set out the breakdown of the global AM market by vendors and by services, which we have set out in the following two exhibits. Exhibit 7 serves to demonstrate the fragmented nature of this market with more than 1,300 vendors globally, and almost 40% of these in the printer (hardware) market.

Exhibit 7: Breakdown of the 2019 US$11.9b global additive manufacturing market



Source: Desktop Metal August 2020 presentation (slide 9)

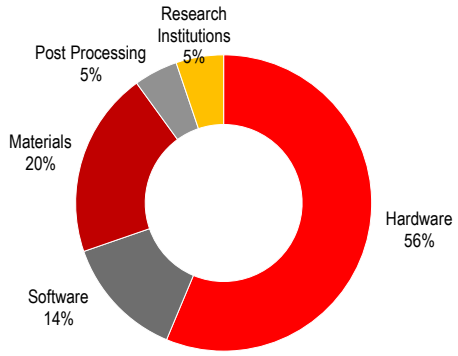
Exhibit 8: Breakdown of global additive manufacturing vendors



Source: Desktop Metal August 2020 presentation (slide 9)

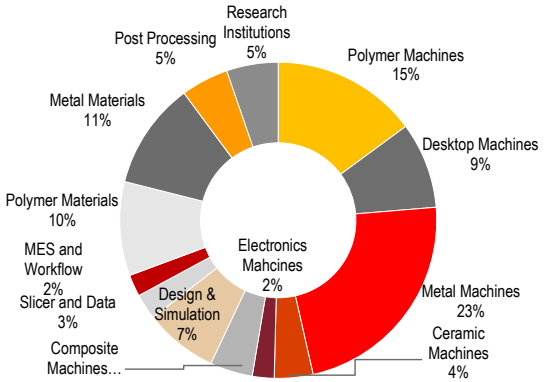
In its Additive Manufacturing Landscape 2020 report, AM workflow solutions group AMFG noted that the additive manufacturing industry had matured with several factors driving its growth, including mainstream adoption of the 3D printing solutions for industrial applications and the broader trend towards digitisation within the manufacturing industry. It estimated that the printer hardware was the dominant category with metal machines making up 40% of this and 23% of the total and metal materials 11% of the total AM landscape. These play to Amaero's strengths.

Exhibit 9: The Additive Manufacturing Landscape by Category



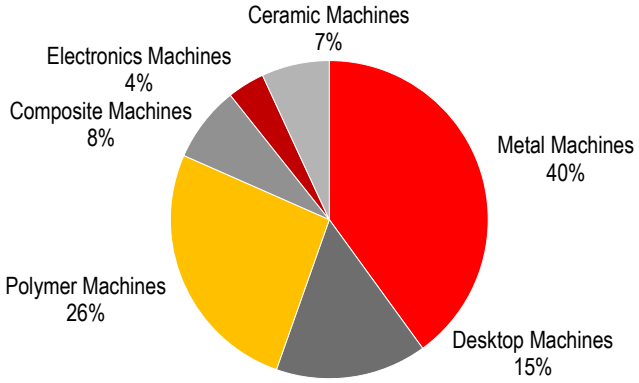
Source: AMFG 2020 report, page 6

Exhibit 10: The Additive Manufacturing Landscape by Segment



Source: AMFG 2020 report, page 6

Exhibit 11: The 3D Printing Hardware Segment



Source: AMFG 2020 report, page 6

Further research published by 3D Hubs in its 2020 Trend Report makes the point that 3D printing is still a very small subset of the broader contract manufacturing market, which surpassed US$175b in 2019[1], while "the share of 3D printing service providers was estimated at approximatelyUS$4b or about 2% of the total",

Market drivers for AM

The main market driver for the take up of additive manufacturing has been the **declining cost** of 3D printers using plastics, making the technology more accessible for a greater number of uses. Whereas in the 1980s, 3D printers using plastics were the domain of commercial operators and carried a capital outlay of more than $300,000, today consumer 3D print printers with the same capability retail for less than $1,000 and industrial/commercial 3D printers using plastics are priced at less than $20,000.

Metal 3D printers have not experienced the same decline in pricing as plastics 3D printers but the market is competitive and this has resulted in the development of many ranges and sizes of 3D printers for industrial, commercial and office applications.

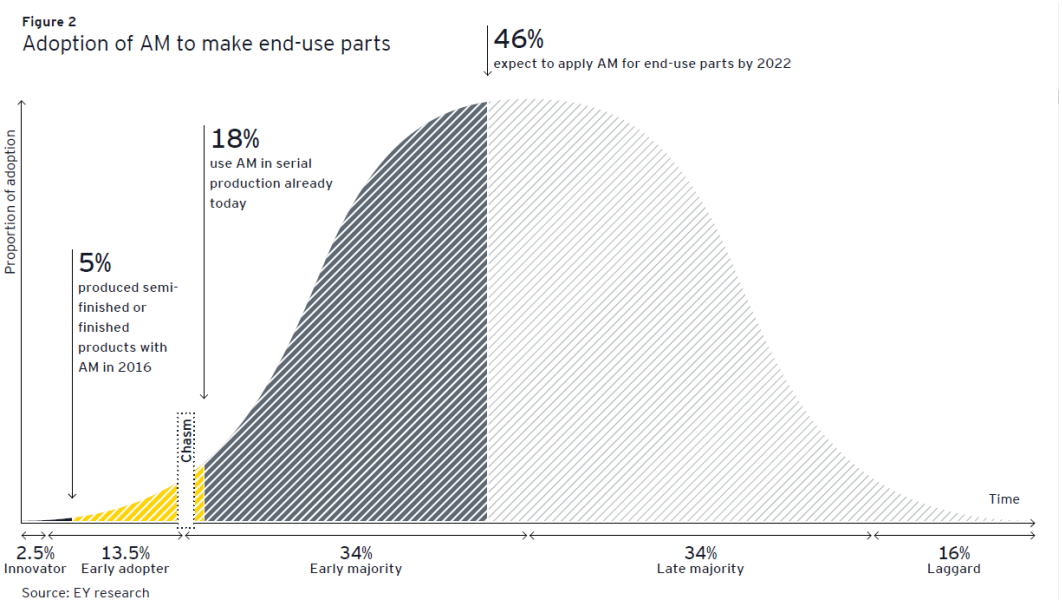
Another major growth driver for AM has been the fact that it **significantly reduces the cost and time of manufacturing prototypes**, including reducing the number of stages in the traditional prototyping process. AM also **significantly reduces manufacturing waste**. Traditional subtractive manufacturing processes

1 3D printing trends 2020, Industry highlights and market trends, 3D Hubs, page 25

machine down blocks to create the desired item, resulting in significant material waste. A good example was presented in the company's prospectus; the manufacture of a 2kg structural titanium fitting for a Boeing 787 would have to be cut from a 30kg block if traditional subtractive manufacturing methods were used, generating 28kg of scrap. The same part, printed and machined to final shape using AM methods, would require only 6kg of titanium wire[2].

The market has also grown due to the **increasing adoption of metal additive manufacturing** which opens up the process to much great market opportunities beyond prototyping. EY's April 2019 survey of 900 companies found that 18% of respondents were using AM to make end components, 15% for tooling and 14% for spare parts, and almost one-third of surveyed companies apply 3D printing to produce one or more of these three types of functional parts[3]. Significantly, the number of respondents that were using AM to make end components had increase more than three-fold since EY conducted its previous survey in 2016 and its 2019 survey found that 46% of respondents expected to apply AM to end use parts by 2022. EY concluded that "AM has reached - and exceeded - the crucial tipping point from being the focus of enthusiasts and visionaries to becoming a technology with broad applications" [4].

Exhibit 12: Adoption of AM to make end-use parts



Source: EY Research, 3D printing: hype or game changer? Page 17

Competitive landscape

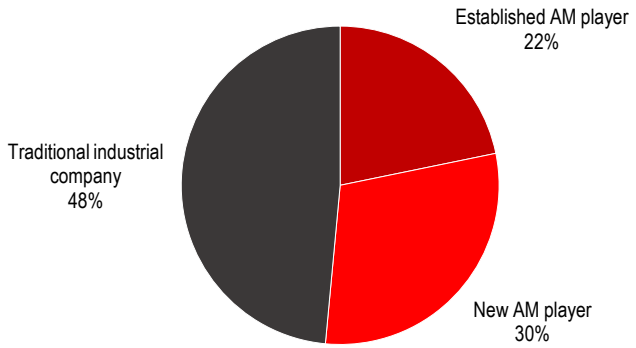
As we have already discussed, there are more than 1,300 AM vendors in the global market and of those around 38% are new to the market in the past decade. EY Research categorised the players into three groups: established AM incumbents; traditional industrial companies and new AM vendors. Established AM incumbents are companies founded between 1980 and 2010, which pioneered the development of additive manufacturing and still generate a significant proportion of their revenues and hold strong market positions. Incumbents include 3D Systems, EOS, Materialise, Protolabs, SLM Systems and Stratasys. Traditional industrial companies are those with no AM heritage but have moved into the technology to expand their product offering and having established a presence are now shaping its future. Players include GE Additive, BASF, DMG Mori, OC Oerlikon, Solvay, Sandvik and Trumpf. New AM players are those that commenced operations since 2010 and are still likely in start-up phase. EY identifies Carbon, Desktop Metal and

2 https://aerospaceamerica.aiaa.org/departments/making-3d-printed-parts-for-boeing-787s/
3 3D printing: hype or game changer? A Global EY Report 2019 (April), page 16
4 3D printing: hype or game changer? A Global EY Report 2019 (April), page 17

Markforged in this category. Amaero also falls into this space. AMFG estimates that US$1.1b was invested in 77 early-stage AM companies in 2019 alone[5].

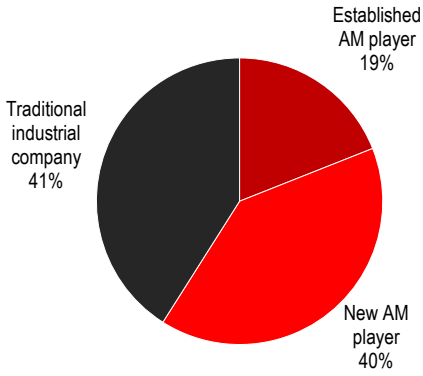
Europe is the largest market by number of AM players (722 or 55%) followed by the Americas (32%) and Asia (13%), but the US has the highest number of any country with 29% of all companies, while Germany is second with 24%.

Exhibit 13: Global AM Players – Americas (n=421)



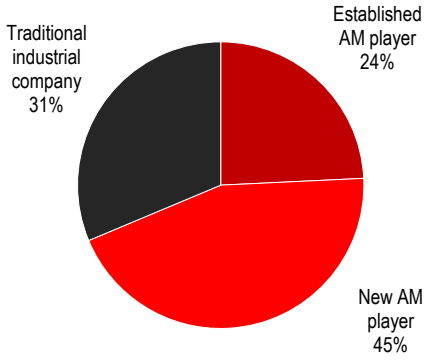
Source: EY Research

Exhibit 14: Global AM Players – Europe (n=722)



Source: EY Research

Exhibit 15: Global AM Players – Asia (n=168)



Source: EY Research

Aerospace market

EY Research identified that the aerospace centre was the most experienced in terms of AM technologies with 78% of respondents claiming they have used the technology and 18% using AM to make spare parts. The research also found aerospace was the most likely (46%) to use AM as a future additional production technology versus chemicals (42%) and life sciences (37%).

Frost & Sullivan estimates that in 2018, the aerospace sector accounted for about 17% of the global additive manufacturing market, across systems, services and materials, with a market value of US$1.86b[6]. Frost & Sullivan estimates this expenditure to grow at a CAGR of 13.2% to US$3.62b by 2025, with the growth primarily driven by the use of additive manufacturing for the manufacture of finished parts and components and the continued use for prototypes and tooling. Similarly, SmarTech Markets is forecasting that the "aerospace industry's adoption of 3D printing solutions is projected to increase from US$723m in 2015 to US$3.45b in 2023, attaining an 18.97% compound annual growth rate".

5 AMFG Autonomous Manufacturing report, the Additive Manufacturing Landscape 2020, page 7
6 Frost & Sullivan market report, Amaero International prospectus, page 14

Defence market

Defence budgets globally are increasingly including expenditure for 3D printing. The US Department of Defence budget in 2018 included US$13.2b for investment into technology innovation, including support for additive manufacturing. Last year, the Australian Department of Defence is spent A$1.5b on 3D printing capability to fast track the Army's supply chain and increase capability[7].

An article by AMFG cited a 2018 study by Defence IQ which found a whopping 75% of industry leaders believe that 3D printing will become standard within the defence industry within the next 10 years[8]. It noted that 3D printing was making its case within defence and military fields, and had the potential to transform the defence industry, providing new ways to 3D print replacement parts on demand, whilst reducing production costs and enabling new design engineering possibilities.

Research house ResearchandMarkets estimates that the defence and aerospace market generated US$1.36b in revenue in 2020 and is forecasting it to reach around US$7.1b by 2028. The market growth dynamics account for a CAGR of 20.1% during the forecast period, 2020-2028.

Tooling market

In its market analysis presented in the Amaero prospectus, Frost & Sullivan identifies agile tooling as a growing application for additive manufacturing, in particular in the manufacture of tools or tool components in metal or plastic or producing moulds to manufacture the tools. Reduced material waste, reduced labour costs and improved functionality of tools are identified as key drivers. Frost & Sullivan forecasts this segment to grow at a CAGR of 11.3% to US$5.43b in 2025 from US$3.17b in 2018.

Earnings forecasts

In framing our forecasts for Amaero, we have examined the GP margins and EBITDA margins of both domestic and international peers with relevance to the company, giving particular regard to the recently Nasdaq-listed Desktop Metals (NYSE:DM) which is seeking to be a major additive manufacturing player in the automotive sector. In its August 25, 2020, pre-IPO presentation, Desktop Metal set out its forecasts from 2020-2025, demonstrating an expectation that gross profit margins would grow to 54% and EBITDA margins to 28.5%. In terms of gross profit margins, this is not dissimilar to the median generated by the basket of international peers that we discuss in the Peer Comparison section on page 19 of the report.

Exhibit 16: Desktop Metal's forecasts for revenue, Gross Profit and EBITDA (In US$M)

Year ending December 31	2019	2020f	2021f	2022f	2023f	2024f	2025f
Revenue	26.4	25.0	77.5	165.8	328.7	584.3	941.5
Gross Profit	(24.4)	(15.4)	19.8	70.1	157.3	306.6	508.3
% GP Margin	NM	NM	25.5%	42.3%	47.9%	52.5%	54.0%
EBITDA	(95.8)	(64.0)	(24.5)	(1.5)	43.6	133.6	268.2
% EBITDA Margin	NM	NM	NM	NM	13.3%	22.9%	28.5%

Source: Desktop Metal August 25, 2020 presentation

Earnings assumptions

We have derived base case forecasts both with and without the various projects that Amaero has discussed in its recent presentation (November AGM). We have done so because earnings forecasts and valuation will be impacted by the commencement and timing of decisions on these projects. Our earnings forecasts presented below include the Fletcher Insulation tooling contract but not the broader opportunity to access Fletcher's global network, nor do we include any forecasts for the potential Middle East 3D printing centre or the Australian titanium powder manufacturing facility. Our forecasts apply the following assumptions:

7 https://www.minister.defence.gov.au/minister/melissa-price/media-releases/defence-extends-world-first-3d-printing-trial

8 https://amfg.ai/2018/06/19/how-3d-printing-is-transforming-the-defence-industry/

- The Fletcher Insulation contract generates US$1.5m in H2 FY21 and US$3m thereafter on an annualised basis;
- Other tooling contracts grow at 24% a year from a base of US$1.2m in FY21;
- The Boeing contract delivers US$5m in FY22 and beyond;
- Machine sales grow from US$0.7m in FY22 to US$22.4m in FY25, with GP margin of 30%;
- Amaero operates a small 120t per annum powder manufacturing facility in the MCAM precinct and has successfully reduced the cost of production to about half that of its competitors. We use a selling price of US$205/kg but have this reducing 5% a year as industry reports suggest there is downward pressure on titanium powder pricing;
- 50% of revenue is deferred;
- Cost of Goods Sold on tooling is 35%;
- We have assumed the company secures R&D grants until it reaches $20m in sales;
- We use a USD/AUD exchange rate of $0.77;
- Costs excluding COGS are forecasted to average 38% of sales over our 10 year forecast period with employee costs the biggest component;
- We have employees growing from 20 FTEs currently to 41 FTEs over the forecast period;

Our forecasts show that Amaero is likely to need to raise additional equity to meet its growth trajectory. We estimate an additional $20m will be required over the next three years. We have assumed this is provided through two equities raising at $10m per raise each at a 10% premium to the last raise, resulting in additional shares of 31.6m.

Below sets out our base case P&L estimates.

Exhibit 17: RaaS' P&L forecasts (in A$m unless otherwise stated)

Year ending June 30	FY21	FY22	FY23	FY24	FY25
Total Revenue in govt grants	3.8	20.7	55.3	80.3	94.8
Cost of Goods Sold	(2.7)	(15.1)	(33.2)	(46.0)	(54.2)
Gross Profit	1.1	5.6	22.1	34.3	40.6
GP Margin (%)	nm	nm	40%	43%	43%
EBITDA	(5.9)	(2.3)	13.5	25.0	30.5
EBITDA Margin (%)	nm	nm	24%	31%	32%
NPAT	(6.6)	(3.4)	12.0	23.1	28.5
EPS (cps)	(3.5)	(1.6)	5.2	9.0	12.3

Source: RaaS forecasts

Project 1 – Globalisation of Fletcher tooling agreement

Amaero was engaged by Fletchers Insulation to develop a superior tooling solution for a tool used in the manufacture of glass fibre insulation. This tool (used to spin the glass fibre) last just 4 days in the production cycle and costs the global insulation industry using this particular technology more than US$350m a year. We have dimensioned a scenario in which Amaero's tooling solution replaces 10% of the current tool.

This results in the following:

- The broader tooling opportunity with globalisation of Fletcher, and its tooling requirements, generating US$35m a year from FY23;
- Additional capex of $22m of required for the global expansion of the Fletcher's project;
- Additional capital raised of $35m with another 53m shares issued to cover additional employees, working capital requirements and capex.

Project 2 - Middle East 3D printer centre

We have dimensioned the 3D printing centre project in the Middle East which has been endorsed by a US defence prime to meet its offset obligations. Amaero is slated to become the manager of this centre as well as deliver the 3D printers.

We assume the following:

- Project commences in FY22 with US$77m in printing and ancillary equipment sales until FY24;
- Amaero is paid a royalty of 6% on the output of the plant's 1,200t per annum powder manufacturing facility;
- Ongoing project management fees of US$1m a year; Margin on the equipment sales is 30%.

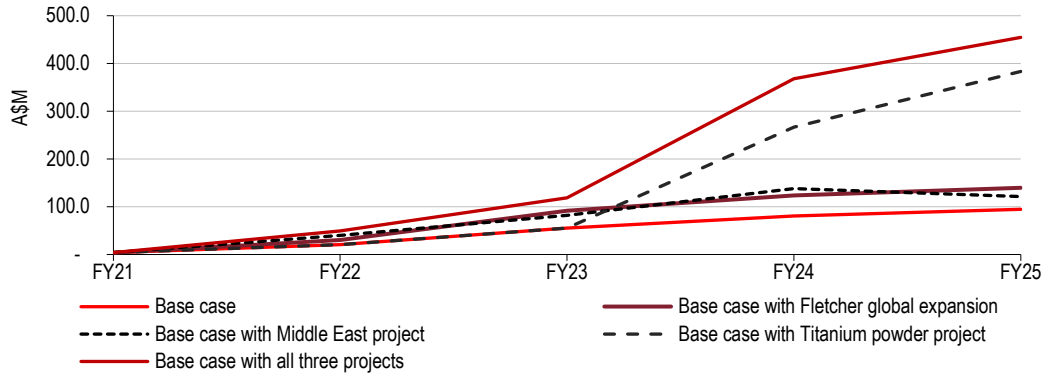
Project 3 – Australian titanium powder manufacturing facility

We have dimensioned the Australian titanium powder manufacturing facility which is being slated for development to service US defence primes. We anticipate that the bulk of the capital cost will be met by a consortium fulfilling defence countertrade obligations. We have used the following assumptions:

- The facility manufactures 120 tonnes of titanium powder a year;
- Cost of production per kilo declines from US$62 to US$50 over 10 years;
- Price per kilo reduces from US$205 to US$168 over 10 years.

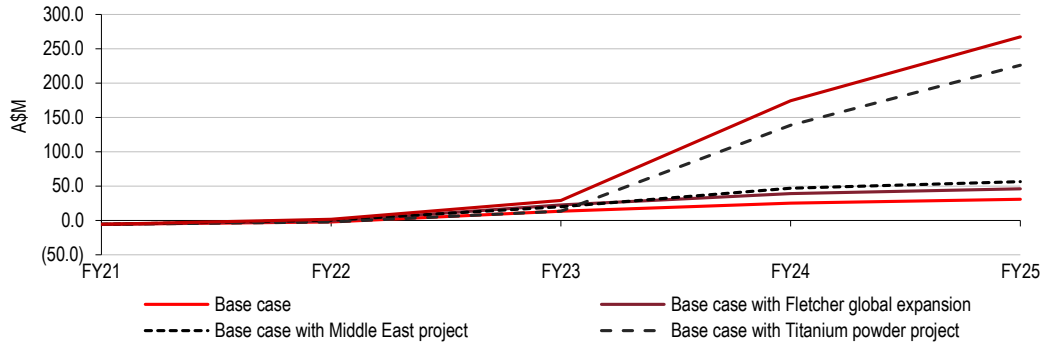
We set out the impact of these projects on our revenue and EBITDA forecasts in the following two charts.

Exhibit 18: Revenue impact of potential projects



Source: RaaS estimates

Exhibit 19: EBITDA impact of potential projects



Source: RaaS estimates

It should be noted that these are RaaS estimates and are very subjective to the timing and outcome of contract negotiations and as such should be treated as at risk of change.

SWOT analysis

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

Exhibit 20: SWOT Analysis

Strengths	Opportunities
Aligned to the premier additive manufacturing research team at Monash University	Untapped opportunities with Defence Forces
Advisory board, directors and management team have strong links into major defence and aerospace companies	Opportunity to be part of a defence prime's offset obligations in the Middle East with a US$77m AM facility to be built
Directors and management and founders aligned with the company, taking 20% of salary in shares from August 2020; own c.30% of Company	Opportunity to create an Australian titanium powder manufacturing facility on the back of defence prime offset obligations
Exclusive rights to titanium powder manufacturing technology that delivers a product at less than half the cost of competitors	Opportunity to develop applications and markets for the next generation alloys both within the PPK/Deakin JV and on a stand-alone basis
Amaero has developed a deep IP pool in terms of know-how, processes, and documentation across metals AM manufacturing, powder and alloys development, management and manufacture	Potential to tap the US markets for a NASDAQ listing and secure a rerating
High calibre customers, research and commercial partners - 6 of the 10 largest aerospace manufacturers are customers	
Weaknesses	**Threats**
Capital intensive business	3D metal printing is highly competitive with several global players
Continuous need to invest in R&D and technology changes	New and superior AM or 3D printing processes could supercede Amaero's technology
While Amaero owns commercial rights, most of the patents are held by Monash University	Customers could choose to transfer intellectual property rights to competitors if Amaero has no sub-licencing rights
Small player in market capitalisation terms relative to international peers	Could get acquired before full shareholder value is realised
Subject to long lead times in the defence decision-making cycle	

Source: RaaS Analysis

Sensitivities

We highlight several sensitivities to Amaero's business:

- **Execution risk:** Our forecasts and valuation are predicated on the company's ability to secure tooling contracts and develop the Fletcher Insulation research agreement into a significant revenue opportunity.
- **Key person risk:** The company's assets, its senior management and technical team, walks out the door. We see potential key person risk if Amaero loses its senior management team including CEO Barrie Finnin. We also see the board and advisory board as crucial to the company's success.
- **Intellectual property risk:** Amaero has generated intellectual property through its research relationships with Monash University and University of Adelaide, through its commercial relationship with 3D printer manufacturing company AmPro and through its internal R&D. There is a risk that disputes will arise over the ownership of intellectual property generated by these relationships.
- **Contract risk:** Amaero relies on key contracts and arrangements to generate revenue. A contract loss could impact the company materially.
- **Currency risk:** Most of Amaero's revenues will be generated in US dollars, while a large proportion of its costs will be in local currency terms. Amaero will need to manage the currency translation for financial reporting.

Board and management

Directors

David Hanna, Non-Executive Chairman, has been the Chair of Amaero since June 2018 and is also the Chair of Docklands Studios Melbourne and a Director of UniMutual. He previously was the Director of Business Strategy for Monash University, a role he held from 2012-2019 and one in which, he was responsible for the strategic support and financial advice on the university's major investment decisions. In the 15 years prior to joining Monash, David held senior management positions in the Victorian Government including the roles of Deputy Secretary, International Coordination and CEO of the Innovation Economy Advisory Board in the Department of Innovation, Industry & Regional Development. He also spent 15 years in the Commonwealth Government, including 3 years on the personal staff of then Prime Minister Hon. Bob Hawke.

Kathryn Presser, Non-Executive Director was appointed in September 2019. She currently is a Non-Executive Director for several organisations including Funds SA and Police Credit Union SA &NT, is a Member of Council for the University of Adelaide and the Independent Chair of the Risk and Performance Committee for the South Australian Department of Treasury and Finance. Kathryn previously served as the Chief Financial Officer and Company Secretary for Beach Energy Ltd (formerly Beach Petroleum) where over a 19-year period, she oversaw the transition of the company from start-up, through several capital raising and ASX listing, to scaling to become an ASX100 company. She is also a Major, part-time, in the Australian Army, a Fellow of the Australian Institute of Company Directors, a Fellow of the Certified Practicing Accountants Association and a Fellow of the Governance Institute of Australia.

Stuart Douglas, Executive Director, was appointed in May 2019 specifically to prepare Amaero for capital raisings and to scale its operations in anticipation of its IPO. He has successfully implemented a similar strategy for Titomic Ltd (ASX:TTT) and K-Tig Ltd (ASX:KTG). Stuart has led many companies from early stage innovations through to multi-national corporations via Innovyz, a company incubator and accelerator which he co-founded in 2011 and which now has spans Australia and the US.

Industry Advisory Board

Patrick Shanahan is the former Acting Secretary of Defense for the USA and acts as Defence Advisor to Amaero. Patrick is recognised globally for his expertise within the aerospace and defence sectors. Prior to his government career he held the position of Senior Vice President, Supply Chain & Operations for Boeing and was responsible for oversight of the company's manufacturing operations and supplier management functions, including implementation of advanced manufacturing technologies and global supply chain strategies. He has held leadership positions in Boeing's defence division with responsibilities for development and deployment of missile defence systems and rotorcraft programs.

David Wolf is Amaero's Global Defence Offsets and Countertrade Investment Advisor. 'Offsets and countertrades' are arrangements common in the global defence industry, where countries require defence primes and other suppliers to make agreed purchases or investments into the host country. David is recognised globally for his expertise within defence offsets, countertrade and private equity, negotiating to successful outcomes more than $15 billion worth of defence offsets and investment over the past 40 years. He is a member of the board of the Global Offsets & Countertrade Association (GOCA), and sits on the board alongside 14 other global leaders of the world's largest defence companies. These include the global heads of offsets from Boeing, Lockheed Martin, Raytheon, Northrop Grumman, Safran, Bell, Leonardo and Saab AB. GOCA's role is to promote trade and commerce between companies around the world with a primary activity to assist large defence primes, which regularly have obligations to invest offsets and countertrade into countries where they conduct large defence contracts.

Hon Christopher Pyne joined Amaero's industry advisory board in December 2020 to advise on defence and geopolitical defence projects. He recently stepped back from politics and from his former role as the Federal Minister for Defence, where he was responsible for the strategy and delivery of more than $200 billion of defence capabilities, Australia's largest investment in peace time history.

Management

Barrie Finnin, Chief Executive Officer, has led Amaero since 2016, which he joined from CSIRO where over more than 12 years, he held several leadership roles in the areas of manufacturing and advanced engineering technologies, with a particular emphasis on advanced components manufacturing for the auto

industry. Barrie has also been responsible for establishing three international manufacturing plants including one in San Diego, California, and has garnered extensive experience operating in international jurisdictions including China, France, USA, Mexico, Japan, the UK and several European countries. Barrie also has held several industry leadership roles including Executive Co-Chair of the China Australia Alliance for New Energy Vehicle Innovation, Deputy Chairman, Science Advisory Council of the Advanced Manufacturing CRC, and Council Member of both the School of Aerospace, Mechanical and Manufactuning Engineering Advisory Council and the Automotive Industry Innovation Council.

Dr Dacian Tomus, Manager – Digital Manufacturing, brings more than 20 years' experience in metallic materials research and manufacturing in Australia and Japan. Prior to joining Amaero in 2016, Dacian was a long-time research fellow at Monash University where he was focused on titanium and magnesium alloys with the ARC Centre of Excellence and Monash University's Centre for Additive Manufacturing. Prior to joining Monash University, Dacian was a research fellow at the Toyohashi University of Technology where he earned his Doctorate in Engineering, Materials Engineering.

Sam Tartaglia, Program Manager – Additive Manufactured Tooling, brings more than two decades experience in engineering, tooling design, casting, and technology commercialisation including a long stint at the CSIRO's Light Metals Flagship as the theme leader for aluminium and magnesium manufacturing. Prior to joining the Light Metals Flagship, Sam was GM Operations at Nissan Casting and before that he spent five years in the US as program manager and plant manager at Teksid Aluminium which produced high volume aluminium engine cylinder heads and blocks for the auto industry.

Daniel Collingwood, Quality Manager Amaero Group, joined Amaero on a part-time consulting basis in January 2019 to lead the process of readying the group for AS9100 certification audits. He brings 18 years' experience in quality control, health and safety to the group.

Ken Davis, Vice President, North American Operations, joined Amaero in December 2020 from CalRAM Inc, where he applied his knowledge and experience in powder metallurgy, additive manufacturing and aerospace and defence qualification processes to achieve a world first National Aerospace and Defense Contractors Accreditation Program (NADCAP) accreditation for both Electron Beam Powder Bed Fusion (ePBF) and Laser Powder Bed Fusion (LPBF) AM Production.

Jane Storey, Accounts and Administration Manager, joined Amaero in December 2019 on a part time basis to oversee the group's accounts and administration. She has held leadership positions in accounting and records management companies across her 20+ year career.

Dr James Sears, Technology Fellow Quality and Additive Manufacturing, is based in Pennsylvania in the US and joined Amaero in July 2020, bringing more than 40 years' experience in metallurgical engineering and extensive experience in metal additive manufacturing and power production. He has held senior leadership positions at GE Research, Carpenter Technology Corporation, Lockheed Martin, Pratt & Whitney and ALCAN.

Jason Miller, Program Manager Aviation Defense and Space, brings more than 20 years' experience in the auto and aerospace industries with stints at Delphi Automotive, GM Holden, Clutch Industries and Futuris Automotive. He has also held research leadership and program management roles at Swinburne University.

Darryl Cummins, Manager Digital Manufacturing, is based in Los Angeles, California, and has worked with some of the largest 3D printing and additive manufacturing companies including Intel, Stratasys and Facebook and has experience with automotive applications of additive manufacturing at BMW, Faraday Future and Sauber Racing. His experience ranges from operating 3D printing bureaux to running AM operations to providing field services for additive machines.

Shon Dionne, Sales Engineer – Additive Manufactured Tooling, brings more than three decades' experience in the automotive component manufacturing sector having worked for a number of players including MVP Plastics, Blackhawk Automotive Plastics, Blue Water Automotive Systems, Huron Plastics and Progressive Moulded Plastics.

Peer Comparison

We have looked to companies with exposure to the defence and aerospace sectors, to additive manufacturing, specialist tooling companies and special alloy manufacturers for Amaero's peers. We have chosen these companies as they all share at least one aspect of Amaero's business lines.

AML3D operates a welding, robotics, metallurgy and software business. The company uses wire arc additive manufacturing (WAM) processes to produce metal components and structures for commercial use. Its Wire arc additive manufacturing process is a three dimension (3D) printing process that combines electric arc welding technology as a heat source and wire as a feedstock, creating industrial scale metal components and structures. Its WAM process focuses on industrial applications across multiple classes of metals, including titanium alloys, nickel alloys and steel alloys. AML3D targets various markets including marine; mining, oil and gas, defence and aerospace and general manufacturing.

Aurora Labs is engaged in the design, development and manufacture of 3D metal printers and associated products and services, 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.

Electro Optic Systems operates in three sectors: defence, space and communications. The company's Defense Systems specialise in weapon systems optimization and integration, as well as intelligence, surveillance and reconnaissance (ISR) for land warfare. Its Space Systems apply optical sensors to detect, track, classify and characterise objects in space and has both military and commercial applications, including managing space assets to avoid collisions with space debris, missile defence and space control. EOS's Communication Systems specialise in optical, microwave and on-the-move radio and satellite products that help to deliver resilient and assured telecommunications anywhere in the world.

K-Tig is the developer and manufacturer of a patented, high productivity welding technology known as Keyhole TIG. K-TIG technology reduces multi-hour conventional Tungsten Inert Gas (TIG) welds to just 3 minutes while still delivering the quality requirements of the nuclear, aerospace and defence industries. In addition to 50x to 100x speed advantages over TIG/GTAW, the K-TIG technology reduces power and gas consumption by up to 95% and dramatically reduces labour costs. The company services Global 500 companies such as General Electric, industry specialists such as Bilfinger and Aibel and the world's pre-eminent advanced manufacturing development centres including the UK's Nuclear Advanced Manufacturing Research Centre, Australia's Defence Materials Technology Centre and US-based GE Global Research Centre. K-Tig is also an Innovyz fund investment.

Novonix is building a battery anode business targeting the Electric Vehicle (EV) and Energy Storage Systems (ESS) markets. The company owns a battery testing business in Novia Scotia, Canada, a synthetic graphite production operation in Chattanooga, US, and holds exploration licences on a natural graphite deposit at Mt Dromedary in Far North Queensland. NVX's battery testing business connects it with key participants in the battery value chain and gives it the advantage of ensuring its anode product will meet the technical requirements of its future customers.

NZ-listed Skellerup Holdings is a global solutions provider of technical polymer products for a range of specialist industrial and agricultural applications. Skellerup operates three segments; agricultural, industrial and corporate. The agri division manufactures and distributes dairy rubberware including milking liners, tubing, filters and feeding teats, together with other related agricultural products and dairy vacuum pumps to global agricultural markets. The industrial division manufactures and distributes technical polymer products across various industrial markets, including construction, infrastructure, automotive, mining and general industrial, together with industrial vacuum pump systems for a range of industrial applications.

Skellerup has operations in New Zealand, Australia, North America, Europe, the United Kingdom and Ireland, and Asia.

Titomic is engaged in developing a new solid-state additive manufacturing process using Cold Spray to produce bulk 3D forms and coatings from both metallic and non-metallic powder feed stock. Titomic's Kinetic Fusion technology is focused on industrial scale manufacturing of large size metal parts as well as high volume production of complex shaped parts. Titomic is also an Innovyz fund investment.

VEEM is engaged in the manufacturing of propellers and industrial products and the provision of engineering services. The company specializes in propulsion and stabilization technology systems with its flagship product, the VEEM Gyro delivering ship roll stabilising technology. It also manufactures products and services for the marine, defence and mining industries. The company is an Australian Defense Force contractor.

Xtek manufactures, and is commercialising, a range of proprietary products for use in the military, law enforcement, aerospace and commercial sectors. The company is a supplier of small unmanned aerial systems (SUAS) to the Australian Defence Forces and is advancing the commercialisation of its XTclaveTM ballistics solutions range of body armour and helmets. It also owns XTatlasTM, real time contextual video, which can be slotted into and enhance existing SUAS systems.

As the following exhibit highlights, the Australian and New Zealand peer group is trading on a historic EV/Revenue multiple of 25.5x. There is not broad enough analyst coverage of this group to glean forward EV/Revenue multiples and most are still in early stage mode and yet to be cashflow positive.

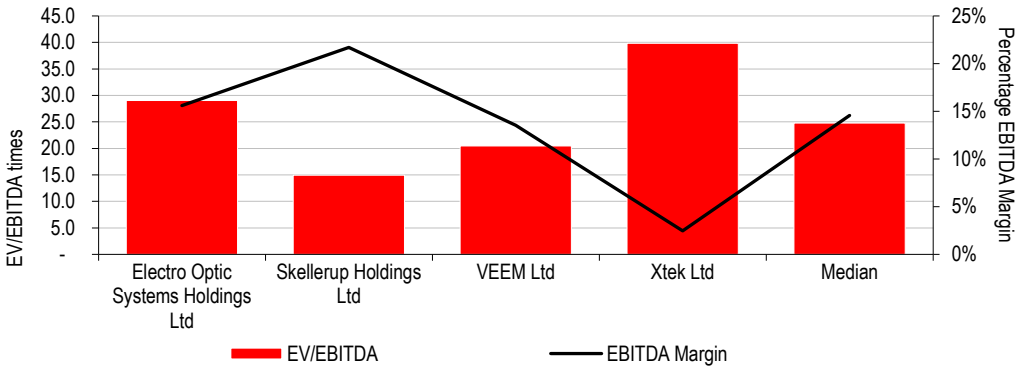
Exhibit 21: Australian Listed Peers

Company	Code	Market cap (A$M)	EV/Sales x	GP Margin	4 yr CAGR in sales
AML3D Ltd	AL3.AX	36	98.37	76%	88%
Aurora Labs Ltd	A3D.AX	13	29.76	42%	15%
Electro Optic Systems	EOS.AX	816	4.53	46%	59%
K-Tig Ltd	S3RDA.AX	53	103.55	30%	206%
Novonix Ltd	NVX.AX	987	189.17	nm	167%
Skellerup Holdings Ltd	SKL.NZ	765	3.24	38%	5%
Titomic Ltd	TTT.AX	89	39.24	58%	308%
VEEM Ltd	VEE.AX	103	2.77	62%	4%
Xtek Ltd	XTE.AX	42	0.99	22%	48%
Median		**89**	**29.8**	**44%**	**59%**

Source: Refinitiv Eikon, RaaS analysis Prices at January 22

There are four peers that are EBITDA positive; EOS, Skellerup, VEEM and Xtek, although the latter is still a developing business. We have set out the EV/EBITDA multiple based on the last reported earnings as well as the EBITDA margin achieved that year in the following exhibit. The median EV/EBITDA multiple is 25.1x and median EBITDA margin is 15%.

Exhibit 22: EV/EBITDA multiples of peers and EBITDA margin on a last financial year basis



Source: Refinitiv Eikon, RaaS analysis

We have also examined an international peer group which operate across the defence, engineering, additive manufacturing, systems software and tooling sectors. These peers were highlighted by Desktop Metal (NYSE:DM) in investor presentations prior to its listing in December 2020. In our view, Desktop Metal is the most closely aligned peer internationally to Amaero, essentially delivering to the auto sector what Amaero delivers to the defence and aerospace sectors. However, like Amaero, it is an early stage company unlikely to deliver positive cashflows for at least two more years. We believe it is relevant to look to these peers on both an historical (last reported earnings) and forward estimates basis.

Exhibit 23: International Peers

Company	Code	Market cap US$M	EV/Sales LTM x	EV/Sales Fwd x	EV/ EBITDA LTM	EV/EBITDA Fwd	GP Margin	EBITDA Margin	5 year CAGR Rev.
AMETEK Inc	AME	$ 26,998	5.7	6.5	20.8	22.4	38%	31%	5%
Autodesk Inc	ADSK.O	$ 65,784	20.2	17.6	134.3	56.1	90%	13%	6%
Axon Enterprise Inc	AAXN.O	$ 10,820	19.7	16.5	1452.8	83.5	58%	1%	22%
Cognex Corp	CGNX.O	$ 14,734	19.7	18.1	85.5	65.2	74%	21%	10%
3D Systems Corp	DDD	$ 4,280	6.7	7.7	nm	149.9	44%	nm	nm
Desktop Metal Inc	DM	$ 5,679	nm	9.7	nm	42.4	nm	nm	nm
Materialise NV	MTLS.O	$ 3,681	18.7	21.6	139.6	199.8	56%	15%	14%
Proto Labs Inc	PRLB.K	$ 5,167	10.9	11.6	45.2	46.5	51%	26%	12%
PTC Inc	PTC.O	$ 15,269	11.0	10.1	48.0	31.4	77%	21%	5%
Renishaw PLC	RSW.L	$ 4,434	8.5	8.2	32.6	34.0	48%	25%	4%
Stratasys Ltd	SSYS.OQ	$ 2,103	2.8	3.5	45.3	252.4	49%	8%	nm
Universal Display Corp	OLED.O	$ 11,675	27.2	27.6	57.2	64.0	78%	48%	16%
Median		**$ 8,249**	**11.0**	**10.9**	**52.6**	**60.1**	**56%**	**21%**	**10%**

Source: Refinitiv Eikon, RaaS analysis Prices at 22 January 2020

DCF Valuation

In our view, given the early stage nature of Amaero's business, we believe the discounted cashflow methodology to be the most appropriate method for valuing the company. We derive a weighted average cost of capital (WACC) of 13.9% (beta 1.9, terminal growth rate 2.2%) and this gives us a base case valuation of $**179.2m** which is 46% upside to the company's current market capitalisation. Our valuation includes our expectation that Amaero will need to raise an additional $20m in capital in the next two years until it becomes cashflow positive. We assume this capital is raised by way of equity and that an additional 32m shares are issued. The valuation implies an EV/Revenue multiple of 8.7x based on our FY22 forecasts and 2.4x FY23 and EV/EBITDA multiple of 12.2x of the same year.

Exhibit 24: DCF valuation

DCF valuation	Parameters
Discount Rate / WACC	13.9%
Beta	1.9
Equity Risk Premium	7.0%
Risk Free Rate	0.5%
Terminal growth rate	2.2%
CAGR in FCF (FY23-F30)	14.0%
Sum of PV (A$M)	65.8
PV of terminal Value (A$m)	89.3
PV of Enterprise (A$m)	155.1
Net Cash inc estimated future capital raisings ($M)	(24.2)
Net Value – Shareholder (A$M)	179.2
No of shares currently on issue	197.6
DCF valuation per share on current shares in A$	**$0.90**
No of shares on issue inc additional shares from raisings	231.5
NPV assuming additional shares issued for equity in A$	$0.77

Source: RaaS Analysis

Valuation range implied in future projects

We dimension the valuation impact of the expanded Fletcher Insulation global opportunity, the Middle East 3D printer centre and the Australian titanium powder manufacturing facility as outlined in the earnings forecasts section on page 12 of this report. As we noted previously, these estimates are subject to final detail

on each project, timing and capital required for each as well as broader market conditions. We have discussed these to demonstrate the potential upside to our current base valuation.

Exhibit 25: Valuation impacts of Project 1, Project 2 & Project 3 on the base case valuation

	Base	Base with Project 1*	Base with Project 2^	Base with Project 3"	Base with Projects 1,2 &3 combined
DCF Valuation $M	179	265	269	991	1,167
DCF valuation per share on current count	$0.90	$1.33	$1.35	$4.97	$5.86
DCF/share if additional shares issued	$0.77	$0.93	$1.12	$4.28	$3.99
Shares used in calculation above	232	284	240	232	293
Revenue FY21	3.8	3.8	3.8	3.8	3.8
EBITDA FY21	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)
Revenue FY30	217.6	263.0	237.0	518.3	583.0
EBITDA FY30	64.9	80.8	83.3	279.4	313.7
CAGR in Revenue %	47.5%	50.7%	48.8%	61.1%	63.2%

Source: RaaS estimates *Project 1 is the Fletcher global expansion, Project 2^ is the Middle East 3D printer centre "Project 3 is the Australian titanium powder manufacturing facility

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Exhibit 26: Financial Summary

Amaero International Ltd						Share price (1 February 2021)						A$	0.63
Profit and Loss (A$m)						**Interim (A$m)**	**H120A**	**H220A**	**H121F**	**H221F**	**H122F**	**H222F**
Y/E 30 June	**FY19A**	**FY20A**	**FY21F**	**FY22F**	**FY23F**							
						Sales Revenue	0.0	0.1	0.4	3.0	7.7	12.3
Sales Revenue	0.0	0.1	3.3	20.0	55.3	EBITDA Adj	(1.7)	(2.4)	(2.8)	(3.1)	(1.8)	(0.4)
Total Revenue	0.0	0.4	3.8	20.7	55.3	EBIT Adj'	(1.9)	(2.8)	(3.2)	(3.5)	(2.3)	(1.1)
Gross Profit	0.0	0.3	1.1	5.6	22.1	NPAT (Adj)	(1.9)	(2.9)	(3.1)	(3.5)	(2.3)	(1.0)
EBITDA Adj	(0.1)	(4.2)	(5.9)	(2.3)	13.5	Minorities	-	-	-	-	-	-
Depn	0.0	(0.5)	(0.7)	(1.2)	(1.7)	NPAT (reported)	(2.8)	(3.0)	(3.1)	(3.5)	(2.3)	(1.0)
Amort	0.0	0.0	0.0	0.0	0.0	EPS (Adj)	(1.72)	(2.03)	(1.77)	(1.74)	(1.11)	(0.47)
EBIT Adj	(0.1)	(4.7)	(6.7)	(3.4)	11.8	EPS (reported)	(2.50)	(1.69)	(1.64)	(1.73)	(1.07)	(0.45)
Interest	0.0	(0.2)	0.1	0.1	0.2	Dividend (cps)	-	-	-	-	-	-
Tax	0.0	0.0	0.0	0.0	0.0	Imputation	-	-	-	-	-	-
Minorities	0.0	0.0	0.0	0.0	0.0	Operating cash flow	(1.5)	(2.8)	(4.7)	(4.7)	(1.1)	0.9
Equity accounted assoc	0.0	0.0	0.0	0.0	0.0	Free Cash flow	0.7	(1.1)	(4.4)	(1.5)	2.2	4.2
NPAT pre significant items	(0.1)	(4.8)	(6.6)	(3.4)	12.0	**Divisions**	**H120A**	**H220A**	**H121F**	**H221F**	**H122F**	**H222F**
Significant items	0.0	(1.0)	0.0	0.0	0.0	Sales and service revenue	0.0	0.1	0.4	3.0	7.7	12.3
NPAT (reported)	**(0.1)**	**(5.8)**	**(6.6)**	**(3.4)**	**12.0**	R&D grants	0.2	0.1	0.5	0.0	0.7	0.0
Cash flow (A$m)						**Total Revenue**	**0.2**	**0.2**	**0.8**	**3.0**	**8.3**	**12.3**
Y/E 30 June	**FY19A**	**FY20A**	**FY21F**	**FY22F**	**FY23F**	COGS	0.0	0.1	0.2	2.5	6.3	8.7
EBITDA	(0.1)	(4.2)	(5.9)	(2.3)	13.5	**Gross Profit**	**0.2**	**0.1**	**0.7**	**0.5**	**2.0**	**3.6**
Interest	0.0	(0.2)	0.1	0.1	0.2	R&D costs	(0.3)	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)
Tax	0.0	0.0	0.0	0.0	0.0	Employment	(0.3)	(0.6)	(1.5)	(1.6)	(1.8)	(2.0)
Working capital changes	(0.1)	0.1	0.1	2.1	1.8	General & Admin costs	(0.8)	(0.8)	(0.8)	(0.8)	(0.9)	(0.9)
Operating cash flow	(0.1)	(4.2)	(5.7)	(0.1)	15.4	Other costs	(0.5)	(0.6)	(0.5)	(0.5)	(0.5)	(0.5)
Mtce capex	0.0	0.0	0.0	0.0	0.0							
Free cash flow	(0.1)	(4.2)	(5.7)	(0.1)	15.4	EBITDA	(1.7)	(2.4)	(2.8)	(3.1)	(1.8)	(0.4)
Growth capex	0.0	(3.9)	(3.6)	(6.5)	(6.5)							
Acquisitions/Disposals	0.1	0.0	0.0	0.0	0.0	Margins, Leverage, Returns		**FY19A**	**FY20A**	**FY21F**	**FY22F**	**FY23F**
Other	(0.2)	0.0	(0.1)	0.0	0.0	EBITDA		nm	nm	nm	(11.3%)	24.4%
Cash flow pre financing	(0.2)	(8.1)	(9.4)	(6.6)	8.9	EBIT		nm	nm	nm	(17.1%)	21.3%
Equity	0.4	13.5	13.8	20.0	0.0	NPAT pre significant items		nm	nm	nm	(16.8%)	21.6%
Debt	0.0	(0.2)	0.0	0.0	0.0	Net Debt (Cash)		0.1	4.0	4.2	16.5	25.5
Dividends paid	0.0	0.0	0.0	0.0	0.0	Net debt/EBITDA (x)	(x)	n/a	n/a	n/a	n/a	1.9
Net cash flow for year	0.2	5.2	4.4	13.4	8.9	ND/ND+Equity (%)	(%)	(41.3%)	(96.3%)	(40.8%)	(122.3%)	(154.0%)
Balance sheet (A$m)						EBIT interest cover (x)	(x)	n/a	n/a	n/a	n/a	- 0.0
Y/E 30 June	**FY19A**	**FY20A**	**FY21F**	**FY22F**	**FY23F**	ROA		nm	(70.2%)	(41.0%)	(10.2%)	18.9%
Cash	0.2	4.0	4.2	16.5	25.5	ROE		nm	(134.5%)	(58.4%)	(15.1%)	33.2%
Accounts receivable	0.1	0.1	0.8	3.6	9.6	ROIC		nm	(222.3%)	(116.6%)	(49.8%)	176.4%
Inventory	0.1	0.5	4.4	10.4	21.3	**NTA (per share)**		0.01	0.05	0.07	0.13	0.18
Other current assets	0.1	0.1	0.3	0.6	1.1	**Working capital**		(0.2)	(0.1)	3.6	5.3	11.7
Total current assets	*0.4*	*4.8*	*9.7*	*31.1*	*57.4*	**WC/Sales (%)**		nm	(121.6%)	107.5%	26.5%	21.1%
PPE	0.5	7.4	10.2	15.6	20.4	**Revenue growth**		nm	nm	2772.2%	498.1%	176.0%
Intangibles and Goodwill	0.0	0.0	0.0	0.0	0.0	**EBIT growth pa**		n/a	n/a	n/a	n/a	(444.0%)
Investments	0.0	0.0	0.0	0.0	0.0	**Pricing**		**FY19A**	**FY20A**	**FY21F**	**FY22F**	**FY23F**
Deferred tax asset	0.0	0.0	0.0	0.0	0.0	No of shares (y/e)	(m)	75	175	217	232	232
Other non current assets	0.0	0.2	0.2	0.2	0.2	Weighted Av Dil Shares	(m)	25	143	145	222	232
Total non current assets	*0.5*	*7.6*	*10.4*	*15.8*	*20.6*							
Total Assets	0.9	12.4	20.1	46.9	78.0	EPS Reported	cps	(0.3)	(4.1)	(3.5)	(1.5)	5.2
Accounts payable	0.4	0.8	1.6	8.7	19.2	EPS Normalised/Diluted	cps	(0.3)	(3.4)	(3.5)	(1.6)	5.2
Short term debt	0.0	0.0	0.0	0.0	0.0	EPS growth (norm/dil)		n/a	n/a	n/a	n/a	(426.5%)
Tax payable	0.0	0.0	0.0	0.0	0.0	DPS	cps	-	-	-	-	-
Deferred revenue	0.0	0.4	1.2	5.3	13.8	DPS Growth		n/a	n/a	n/a	n/a	n/a
Total current liabilities	*0.5*	*1.2*	*2.8*	*14.0*	*33.1*	Dividend yield		0.0%	0.0%	0.0%	0.0%	0.0%
Long term debt	0.0	0.0	0.0	0.0	0.0	Dividend imputation		0	0	0	0	0
Other non current liabs	0.0	2.9	2.9	2.9	2.9	PE (x)		-	-	-	-	12.2
Total long term liabilities	*0.0*	*2.9*	*2.9*	*2.9*	*2.9*	PE market		18.6	18.6	18.6	18.6	18.6
Total Liabilities	0.5	4.1	5.7	16.9	36.0	Premium/(discount)		nm	nm	nm	nm	nm
Net Assets	**0.5**	**8.2**	**14.4**	**30.0**	**42.0**	EV/EBITDA		nm	nm	nm	nm	nm
						FCF/Share	cps	(0.2)	(2.4)	(2.6)	(0)	7
Share capital	0.6	14.0	27.3	47.3	47.3	Price/FCF share		(349.0)	(26.1)	(23.8)	- 1,028.4	9.4
Accumulated profits/losses	(0.1)	(5.9)	(13.0)	(17.3)	(5.4)	Free Cash flow Yield		(0.3%)	(3.8%)	(4.2%)	(0.1%)	10.6%
Reserves	0.0	0.0	0.0	0.0	0.0							
Minorities	0.0	0.0	0.0	0.0	0.0							
Total Shareholder funds	**0.5**	**8.2**	**14.4**	**30.0**	**42.0**							

Source: RaaS Advisory

FINANCIAL SERVICES GUIDE

RaaS Advisory Pty Ltd

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Corporate Authorised Representative, number 1248415

of

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