

INVESTMENT INSIGHTS

1500% in 8 months. What's the story inside?

---Aitch Investment Pty Ltd

5 June 2018

SUMMARY

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BUSINESS HIGHLIGHTS

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- ADVANCED TECHNOLOGY WITH LOWER COSTS AND UNLIMITED BUILD SIZE AND SHAPE
- BICYCLE FRAMES PRODUCED BY 3D PRINTER
- INTELLECTUAL PROPERTY APPROVED BY SEVERAL JURISDICTIONS
- WIDE APPLICATIONS IN MANY INDUSTRIES
- R&D PROJECTS COMMENCED GLOBALLY
- EXPERIENCED TEAM OF TITOMIC

CHALLENGES CONFRONTED

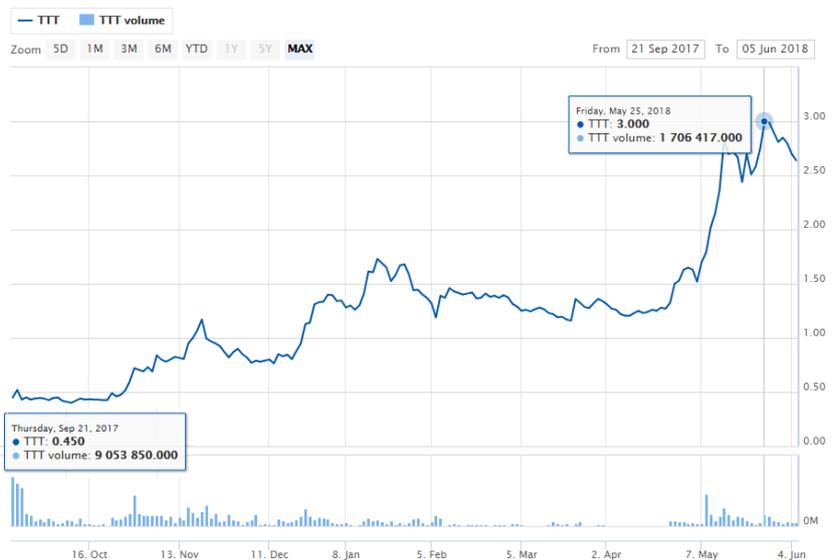
- NO REVENUE AT THE MOMENT
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- UNCERTAINTY OF CUSTOMER'S FEEDBACK
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Titomic Equity Research Report

From its IPO in September 2017 to the May this year when Titomic Ltd launched what it claims to be the "world's largest and fastest" metal 3D printer the company's share price rose by almost 1,500 pc. In this article we will try to understand whether 3D printing is a really new long-term trend and what benefits Titomic can offer to its investors.



Source: www.asx.com.au

Securities description ---Ordinary Fully Paid

| Day | | Year | | Ratios | |
|------------------|-------------|----------------|---------|-----------------|------------|
| Open | 2.61 | Previous close | 2.64 | P/E | - |
| Day high | 2.71 | 52 week high | 3.12 | EPS | -0.016 AUD |
| Day low | 2.47 | 52 week low | 0.37 | Annual dividend | - |
| Daily volume | 708,800 | Average volume | 596,081 | yield Help | - |
| Bid | 2.6 | | | | |
| Offer | 2.61 | | | | |
| Number of shares | 122,898,217 | | | | |

Source: www.asx.com.au on 6th of June, 2018

Business Description

Titomic Limited (TTT) is an Australian company specialized in helping company leverage advanced materials and a new additive manufacturing technology, known as “Titomic Kinetic Fusion”. The company has the exclusive rights to commercialize, a proprietary and patented process, for the application of cold-gas dynamic spraying of Titanium or Titanium alloy particles onto a scaffold to produce a load bearing structure, which will be integrated into clients’ manufacturing supply chain to produce the components without any shape or size limits while reducing waste and saving energy. Titomic Kinetic Fusion process has wide applications for



most manufacturing sectors, particularly in sports equipment, naval vessels, airframe components and surgical implants. Moreover, Titomic’s new Melbourne

Facility has launched the world’s largest metal 3D printer with 40.5 cubic metre build volume and will provide clients with a bureau to research, develop and manufacture prototypes and products utilizing their advanced technology in future.

Business Highlights

World largest and fastest 3D printer

In the end of May 2018, Titomic partners with Advanced Robotic Australia and Plasma Giken company to launch a full turn-key bespoke custom 3D printer in Melbourne Facility. This machine will be the largest metal 3D printer in the world and have the highest deposition rates (45kg/h) in its manufacturing process, which means it is faster than existing 3D printers in the market.

The materials used into this machine are not limit to Titanium or Titanium alloys, but many other metals as well as ceramic-based materials and the production line will be capable of manufacturing and finishing/polishing complex-shaped titanium products, especially for 3D Titanium bicycle frames.



Advanced technology with lower costs and unlimited build size and shape

Titomic's differentiator in the metal additive manufacturing industry is the ability to manufacture industrial scale, large size parts currently not available with any other system or technology with lower costs and higher speed. Instead of the expensive highly refined powders, Titomic could use cheaper unrefined grade powders, around 20 to 50 US dollar per kilogram, in the manufacturing process.



Moreover, Titomic Kinetic Fusion process could create some complex shapes, such as oval, tear-drop and conical tubes with no limited build size while limited build size and product shape could be produced by traditional additive manufacturing process. Apart from that, the whole process neither requires inert environment nor metal melting, which could eliminate oxidation issues and save up to 80% of material wastage.

Bicycle frames produced by 3D printer

Titomic Kinetic Fusion technology could be used to spray out Titanium powder on the aluminium bicycle frames and then melt the metal to a specific temperature to leave Titanium frames only. Based on that technology, Titomic's production cell utilizes digital robotics to fully automate the production of Titanium bicycle frames and then the parts are automatically moved to subsequent robot Finishing & Polishing cell.



The build time for one Titanium bicycle frame will be 30 minutes by Titomic, which is much shorter than five days using traditional additive manufacturing.

Intellectual property approved by several jurisdictions

Titomic's core technology is known as "Titomic Kinetic Fusion", which is a patented process co-developed with Commonwealth Scientific and Industrial Research Organization (CSIRO). Based on cold spray robotic technology used on aircraft and industrial equipment repair, the manufacturing process involves accelerating metal powders (Titanium or Titanium alloy particles/ powder) to supersonic speeds onto surface, fusing on impact to form a 3D load bearing structure.

The most impressive point is that Titomic is capable of manufacturing industrial scale utilizing this advanced technology into 3D printing. Until May 2018, the company's patents have already granted in several jurisdictions, for example, USA, China, Australia, Japan and New Zealand, in the meantime, South Korea patent is still pending, and European patent office has completed examining the application, expected to be granted in the near future. These granted patent jurisdictions further expand Titomic's market opportunities to cover some of the world's largest economies.

Wide applications in many industries

Titomic Limited focuses on advanced materials used in a variety of complex-shaped product applications for a number of industries including sporting goods, aerospace, automotive, marine, building and construction, medical and military in Australia, Europe, and the United States.

Titomic planned to attend or exhibit at both domestic and international trade shows to introduce their advanced technology and attract potential customers all over the world. In 2017, company had marked a milestone at Pacific 2017 International Maritime Exposition in Sydney, winning the 'Best Maritime Innovation' award. In early February 2018, Titomic exhibited at the Singapore Airshow as part of Team Defence Australia and attend the international Titanium Conference in Singapore. Throughout the remainder of this year, company plans to attend trade shows across a number of different industries, including Australian Oil & Gas Expo, National Manufacturing Week, Eurobike in Germany, International Titanium Association in USA and FormNext in Germany.

R&D projects commenced globally

Titomic, collaborated with several companies, has commenced R&D projects in different industries this year, including developing Titanium bike frames with major USA bike brand, super alloy of golf clubs with Callaway Golf company, high performance coatings for valves with Callidus Welding Solutions in mining industry and making prototype for steel armament components with Australian Defence constructors. In addition, Titomic entered a 12-month Memorandum of Understanding with Italian shipbuilder Fincantieri in May 2018 to evaluate the potential for company's technology, Titomic Kinetic Fusion, to be used in Fincantieri's manufacturing activities.

Experienced team of Titomic

The exact organisational structure of Titomic has not been disclosed by the company, however, it is known that a new CEO (Gilbert Michaca) was appointed and he will commence the role on 18th June 2018. Gilbert has experience in service engineering and technical sales management. He obtained experienced in prototyping during his work at Minifab Australia. The current CEO Jeff Lang will focus on his role as full-time Chief Technical Officer and Board Director. Jeff holds 8.8% of company's shares. The biggest shareholder is Richard Fox (24.7%), who is Non-Executive Director and founder of Titomic. Titomic is planning to extend its sales team to enter global markets focusing on potential products as country choice criteria.

Challenges confronted

No revenue at the moment

Referring to the Titomic's financial report in 2017, the company did not generate any operating revenue yet, which indicated that Titomic was not able to effectively commercialize the Titomic Kinetic Fusion technology with their branded products. After a year, in 2018, although Titomic, collaborated with a North American Bike brand, has produced the 3D Titanium bicycle frame, it neither intended to manufacture it in an industry scale, nor made it as the main source of income. Mich Mak, who is the investor relations and marketing manager, also mentioned at the launch event in May that Titomic has material revenue at the moment, but that still cannot cover their R&D costs and other costs.

Unsure about commercialization with their technology

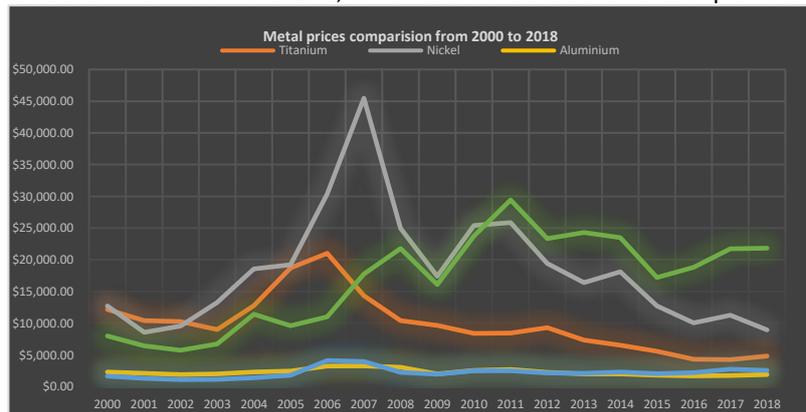
There is no doubt that Titomic Kinetic Fusion is an advanced technology among additive manufacturing process. However, commercialize the business model of offering and manufacturing licenses to third parties cannot be assure. Moreover, the capability of production in industrial scale is in uncertainty. It is also unknown that Titomic could provide the finished goods to meet customers' needs and produce them in a good quality and timely manner.

Uncertainty of Customer's feedback

The main sources of income for Titomic are through R&D prototyping Service Bureau, selling a range of Titomic Kinetic Fusion equipment, branded powder and providing manufacturing services and maintenance program to their potential customers. Therefore, the feedbacks from customers' side are vital to the company. It is uncertainty that whether the products Titomic made could fit customer need very well and whether the customers satisfied of finished goods company made. Although Titomic had attended many trade shows from 2017 to 2018, it still need to wait to see the customers' reactions about this technology.

Relatively high Titanium costs

The material used in 3D machine is mainly Titanium or Titanium alloy powder. But comparing the price of other metal materials in the market, Titanium is more expansive than Aluminium and Zinc, which could increase the costs in production.



Comparison of different metal prices from 1980 to 2018 in US\$ per metric ton. Retrieved from Metalary¹.

No patents protection

Due to globalization strategy, Titomic intends to introduce their advanced technology and build customer relationships in the whole world. The company has achieved patents in many jurisdictions, for example, China, USA, Japan, Australia and New Zealand. However, the question thus arises: How could company find the way to protect their patents? It still gives some space for other companies to imitate and use their technology without paying the patent fees. Moreover, it is more questionable of Titomic's capability to prosecute the counterparties under the large amount of attorney fees.

Threat from competitors

Among key Titomic's competitors there are the industry giants as xxx. The local competitor xxx designs, develops and manufactures 3D printers.

More in particular xxx sells S-Titanium Pro 3D metal printer. Moreover, the company has a developed chain of distribution. However, this printer come short fall on size to Titomic. The build size for xxx's printer is 20x20x50cm (0.02 m³), while Titomic can offer 9x3x1.5m (40.5 m³) build size.

During its presentation for investors on 17th May Titomic showed its recently installed production line for bike manufacturing using Titomic Kinetic Fusion process with application of a tube and lug system. It can also be constructed in a monocoque design. There are several Australian and international companies that manufacture titanium bike frames. xxx and xxx manufacture race bicycles while a UK based xxx develops mountain bikes by applying additive manufacture technology.

¹ <https://www.metalary.com>

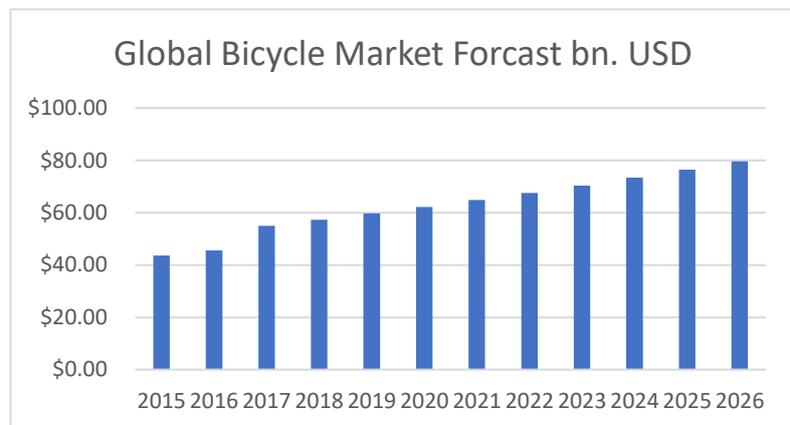
Financial forecasts and industry analysis

Titomic has raised 6.5 million AUD in 2017 during its IPO and additional 12 million AUD in April 2018 by issuing 9,600,000 ordinary shares. Currently Titomic's capitalization is equal to 172 million AUD.

The company announced that it is going to focus on sporting goods (bikes and golf industry in particular), Aerospace, Defence and Marine.

For a potential investor it would be interesting to assess these industries to estimate future revenue of Titomic. Currently Titomic installed its first production line for demonstrating its technology for bike manufacturing.

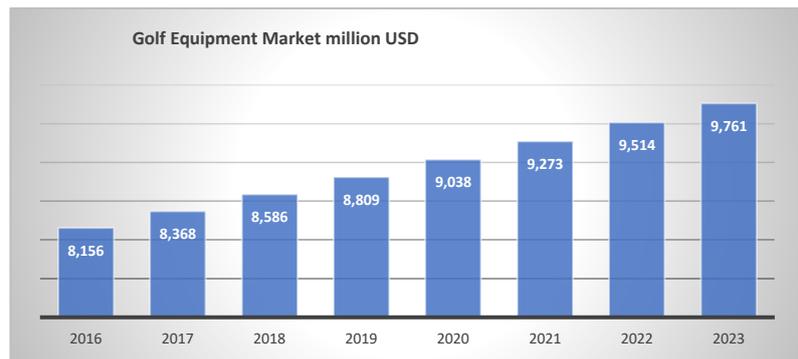
It is estimated that global bicycle market is worth 55 billion USD with moderate CAGR of 4.2%. Based on the figures we can predict the growth of the market and conclude that it will reach 80 billion USD by 2026 ².



Source: Aitch Investment estimates

It means that Titomic has steady potential for development in the industry.

The golf market equipment consists of three main categories: golf clubs, golf balls, golf shoes and bags.³



Source: Aitch Investment estimates

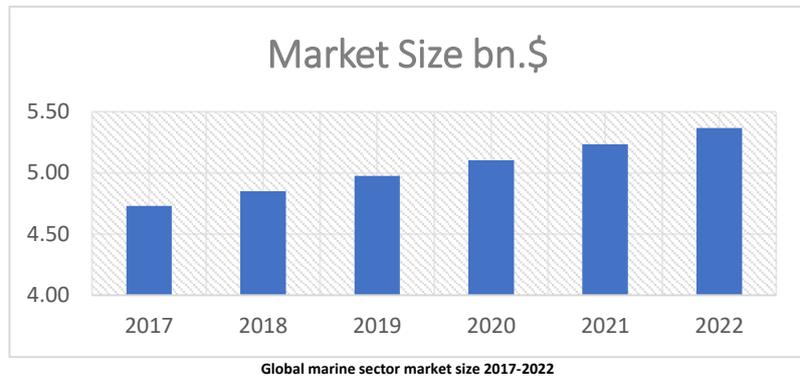
Titomic has entered into an exclusive 12-month collaborative agreement with Callaway in May 2018, which focuses on producing clubs, balls, shoes and bags.

² <https://www.persistencemarketresearch.com/market-research/bicycle-market.asp>

³ <https://www.alliedmarketresearch.com/golf-equipment-market>

If the clubs present 49.79% of the market, it means that in 2017 the size of the club’s market in particular was about 4 billion USD. If Callaway sells 643.1 million USD clubs in 2017, meaning that the company covers approximately 16% of the market.⁴

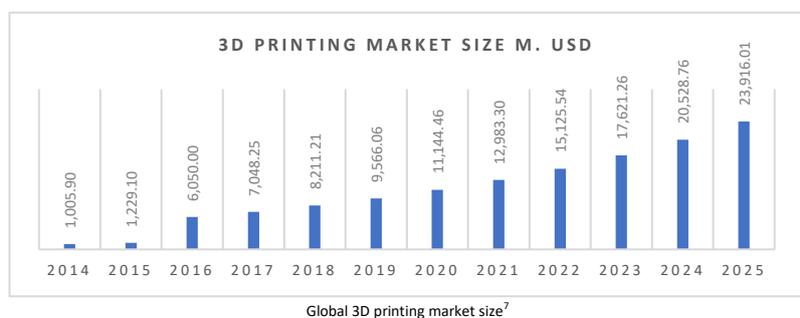
Marine sector market size was equal to USD 4.73 Billion in 2017 and is projected to reach USD 5.37 Billion by 2022.⁵



On the May 14th 2018 Titomic signed a memorandum of understanding with Fincantieri. Fincantieri is a shipbuilder with a headquarter in Italy. The revenue of the company has been growing for the last three years and to our estimation will continue to grow and will achieve 5.5 bn EUR varying from 5 to 6 bn.

Consequently, the three markets have high potential for Titomic to go in partnership with manufacturers and generate revenue. However, forecasting of Titomic’s revenue is not so straightforward, as the company provides prototyping and engineering service and sells printers and powders but not manufacturing goods itself.

To estimate Titomic’s future revenue we compare the company to the biggest company at the market by capitalization xxx (1.42 bn. USD). XXX reported revenue equal to \$ 666,163, \$ 632,965, 646,069 thousand for 2015, 2016 and 2017 respectively,⁶ meaning that xxx represents 54.20%, 10.46% and 9.17% respectively. Capitalization shows how confident investors are about future performance of the company. The calculations are made based on the data of the 3D printing market size data provided below. Based on compression analysis we can forecast that with market capitalization of 165.5 million AUD Titomic can cover 1.13% of the market by 2019.



Outlook

Titomic is a fast-developing company in a fast-growing sector with world class specialists who are passionate about their work. Titomic's price has grown by almost 1500% since the IPO, meaning if you initially bought 500,000 shares for 100000 AUD you would earn 1,400,000 AUD for 9 months. The stock stays volatile with a weekly range of 0.45 AUD. The company is involved in several dynamic projects in sport and marine industry with a focus on further global business development. A new CEO commence the role on 18th June 2018 and the company is planning to extend the team for its business development. Titomic has substantial potential to grow and develop its business in Australia as well as overseas.

⁴ <https://www.businesswire.com/news/home/20160901005042/en/Golf-Equipment-Market-Driven-Specialty-Sports-Shops>

⁵ <https://www.marketsandmarkets.com/Market-Reports/marine-propeller-market-125429993.html>

⁶ https://au.3dsystems.com/sites/default/files/2018-03/3d-systems-2017-form-10-k_0.pdf

⁷ <https://www.grandviewresearch.com/industry-analysis/3d-printing-industry-analysis>