

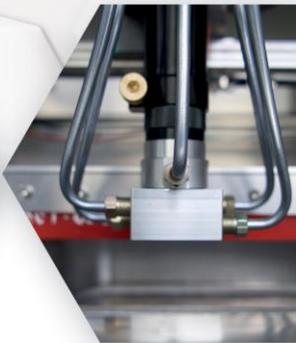
# Aurora | LABS

Corporate Presentation: January 2017

**WHAT DO YOU WANT TO BUILD TODAY?**

**CUTTING EDGE TECHNOLOGY  
ENABLING OPPORTUNITY**

**AURORA IS AN INDUSTRIAL TECHNOLOGY AND INNOVATION  
COMPANY THAT SPECIALISES IN THE DEVELOPMENT OF 3D  
METAL PRINTERS, POWDERS AND DIGITAL PARTS AND  
THEIR ASSOCIATED INTELLECTUAL PROPERTY.**





## THE PROBLEM

**High Price Machines** is an important concern for many small businesses considering the transition to 3D metal printing. Most 3D metal printers start in the vicinity of US\$100,000 up to 2m+

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**Slow machine speeds** make 3D metal printing impractical to many businesses requiring a rapid turnaround of prints. It can often take several weeks or months to print a part

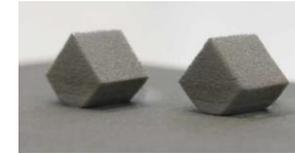
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**Resulted in a costly part.** Typical Machine prints have to be charged out at 3000\$ per kg and approximately 70% of that cost is from the amortization of the machine





## THE SOLUTION



**Low Price** – Aurora’s Small Format printers retail for US\$49,999 (excluding GST and shipping), which is affordable to most small business and research institutes

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**Fast speeds** – The Titan Large Format Printer is being designed to print up to one tonne of metal parts in 24 hours which is approximately 100 times faster than existing 3D printers on the market

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**Net Part Cost Reduced** – The much lower cost or higher volume production creates the potential for 3d printing to be cost competitive with traditional manufacturing



## WHO USES 3D METAL PRINTING?

In late 2016 **GE**, bought two 3D Metal printing companies (**Concept Laser** and **Arcam**) for approximately 1.4B to bolster the incorporation of 3D printing into their manufacturing stream<sup>1</sup>.

According to a PwC survey of US manufacturers, **two of three companies are already adopting 3D printing** in some way<sup>2</sup>.

Based on internet searches and Aurora's direct contacts, some of the major organisations that use 3D metal printing include:



1. <http://fortune.com/2016/10/27/ge-3d-printing-concept-laser/>  
2. PWC – 3D printing and the new shape of industrial manufacturing  
Note: Aurora Labs does not claim the above Companies endorsement



## MARKET ANALYSIS AND OPPORTUNITY

**Global metal manufacturing** was estimated to be a US\$3.8 trillion industry in 2014<sup>1</sup>.

**3D metal printing** could potentially replace a large percentage of traditional metal manufacturing.

**3D printing industry market size is** currently US\$5 billion as at 2015 and forecast to increase to US\$20 billion by 2020<sup>2</sup>.

**Prices of machines need to fall and / or speeds need to improve** for large scale disruption to happen.

Aurora believes its **unique Large Format Technology** is the answer.

1. The Business Research Company – Metal Manufacturing Global Market 2016
2. Source: Canals Industry Report





## THE SMALL FORMAT PRINTER

- ◆ Full commercial production began at the end of 2016.
- ◆ **Aurora** manufactures the S-Titanium Pro 300w 3D metal printer.
- ◆ **The machines print in three modes** (SLS, SLM and DED) whereas most competitor machines only print in one to two modes.
- ◆ Three independently controllable powder hoppers allow **flexibility in alloying and pseudo-alloys**.
- ◆ The print bed is one of the **largest on the market** at this price point.
- ◆ Likely to be one of the **cheapest 3D metal printers** on the market at a price of US\$49,999.00
- ◆ **Substantial interest** from global mining companies, universities, jewelry manufacturers, dentistry, prototyping and many other industries.

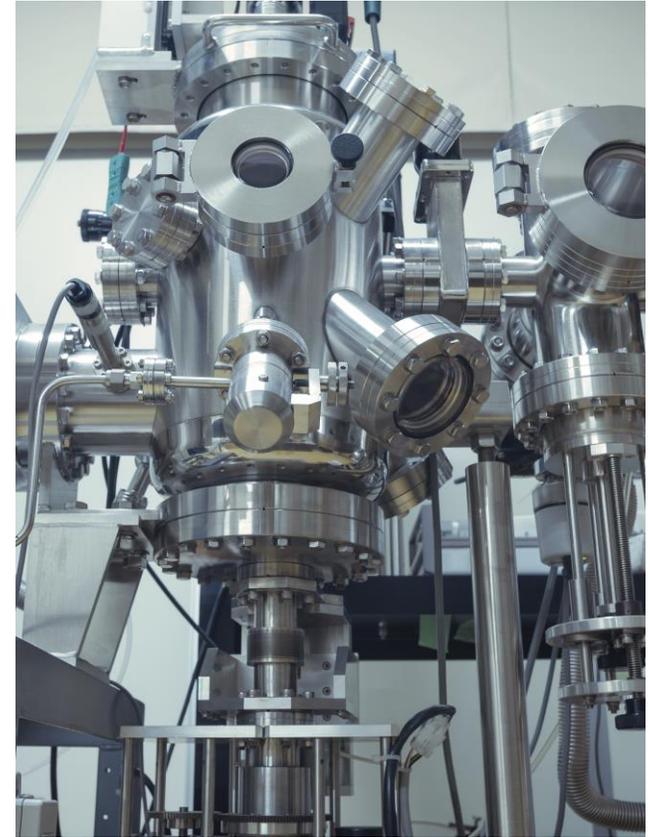


S-Titanium Pro beta machine



## THE MEDIUM AND LARGE FORMAT PRINTERS

**The Large Format Printer** is being designed to print up to one tonne of metal parts in 24 hours, which is believed to be approximately 100 times faster than existing 3D printers on the market.



Complexity is Free!





## THE MEDIUM AND LARGE FORMAT PRINTERS

**Aurora believes** the Medium and Large Format printers can possibly replace a large percentage of traditional metal manufacturing.

**The printers** will be able to produce unusual shapes that are difficult to produce using traditional methods.

**Aurora believes** that the Large Format Printer will be especially beneficial to the mining and oil and gas industries that use numerous metal parts but do not wish to maintain vast stores of spare parts.



Low Alloy Steels are available



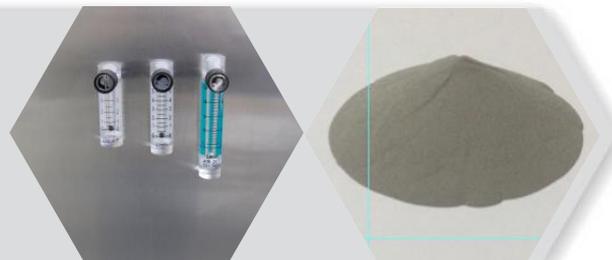


### Sale of metal powders

- Sales of powders to customers for use with its 3D printers.
- The Medium and Large Format printers are being designed to use powders to be supplied by Aurora, to ensure quality and OEM certified status.
- As the Medium and Large Format printers is designed to use a lot of metal powder, Aurora intends to investigate building its own powder production plant. Aurora supplies pure metal, alloy and cermet powders.
- The Company is investigating designing and building a small scale pilot powder plant.

### Pay-per-print and Digital Rights Management

- Aurora intends to develop software allowing customers to search an online store of part designs and specifications.
- The store would allow customers to buy a one-off or multi print license to manufacture parts or components from an OEM.
- The software is intended to allow print build monitoring and shape conformity to allow certification of parts as meeting design criteria.





## THE JOURNEY SO FAR

**David Budge started working on 3D printing concepts over 20 years ago.**

In August 2014, David founded Aurora Labs with Jessica Snelling and William Crisp.

David sought to use existing technologies in innovative ways to make an affordable 3D metal printer utilising the software programming skills of Jessica and Will. Thus the S-Titanium range of Small Format Printers were developed and improved over the 2014/2015 period. In 2015, Aurora commenced pre-sales of the S-Titanium printers.

In mid 2016, Aurora began beta testing of the S-Titanium printers in anticipation of commercial production.

In December 2016 first production S-Titanium printer is delivered.

Full production of S-Titanium begins December 2016.



Production Line 2017



## IN THE PRESS

When I first started in this field it was very novel, the 3D printing has undergone many changes since then and we are finally on the cusp of a major breakthrough in large-scale metal printers. Over the last year I've worked with a Perth-based start-up Aurora Labs, who is at the forefront of 3D printing globally. – Professor Tim Sercomb (University of Western Australia) reported in UWA news (Article: UWA working on transformational 3D printing).

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Budge has already fielded offers from parties interested in buying the startup outright, but he says they're not ready for that. Particularly as 3D printing is on the cusp of becoming commonplace in manufacturing. (startupsmart.com.au)

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As a 15-year-old, David Budge dreamed of working for NASA. So when the space agency contacted his tiny, nondescript warehouse office in Myaree and asked to buy one of his 3-D printers, he was able to tick one thing off his bucket list. Add Siemens, Alcoa and Airbus to the list and the self-described robotics fanatic reckons he is onto a good thing. – NASA calls on 3-D printer maker (The West Australian newspaper).



# Aurora | LABS

Company Update: January 2017

**WHAT DO YOU WANT TO BUILD TODAY?**

**THANK YOU FOR YOUR INTEREST**

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