

Tridimensional Innovations

3D SCANNING & 3D PRINTING SOLUTIONS FOR AUDIO

CAMPBELL, CA

The “Luxottica for Custom Fit Audio products”: We build the 3D manufacturing technology, services and infrastructure that makes every ear bud, ear plug, hearing aid, "hearable" or ear tip Custom Fit to its user.”

Company Summary

Tridimensional Innovations is a Silicon Valley company building the supply chain technology that makes a variety of custom fit audio products easily accessible for everyone. We supply 3D scanning, 3D CAD and 3D printing services at or near retail locations to enable custom fit audio product in about an hour, in a hardware-as-a-service model with recurring income.

Problem

People hate when their ear buds, communications headsets, and ear plugs **hurt, fall out, or let noise in**. But most ear tips fail in all of these ways. Custom Fit Ear Tips eliminate all these complaints. But getting them is so expensive, time consuming and complicated that consumers never consider Custom Fit audio options. The current supply chain relies on shipping physical impressions to factories, and having finished products shipped back, which is even more expensive and slow for overseas sales. Turnaround can take weeks.

Solution

We have developed low cost, fast and convenient supply chain based on sending bits over the Internet in seconds, instead of atoms that take days, which will enable us to become the *Luxottica/Lenscrafters* of Custom Fit Audio.

- 1) **Point-of-Sales 3D ear scanning service**,
- 2) **In-the-Cloud 3D CAD service** converts scans to ready-to-3D-print models
- 3) **Local 3D printing service** for manufacturing at or near Point-of-Sale.

Product Status

Our 3D POS ear impression scanner has gone through 4 revisions, and a beta test with target users who loved it. As a result, we have Letters of Intent from one UK customer for 150 scanners to be deployed in UK National Hospital Service hospitals, and 300 more in stores that sell custom audio products. However, we need Seed funds for the factory setup and 1st manufacturing run to convert these letters of intent to sales.

- We have a partner who can provide us with the cloud based CAD services
- We have tested the Form Labs Two 3D printer and it meets our needs for making earpieces at or near point-of-sales locations through our 3D printing service. We have a working agreement to act as a reseller or incorporate these printers in our service.
- We have another Letter of Intent for 10,000 ear scanner kiosks for deployment in mobile phone stores in Asia. We have done R&D work sufficient to believe that we can successfully finish this product, but we need funds to complete the R&D and begin tests.



URL: <http://tri-di.com/>

Founded: July 2016

Employees: 10



Contact:

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Round Overview

Funding Stage: Seed
Beta complete, ready for mfg.
Capital Raised: \$0
Capital Seeking: \$500k
Pre-Money Valuation: \$5M
Run Rate: \$0
Net Monthly Burn: \$50k

Currently bootstrapping with personal funds and sweat equity.

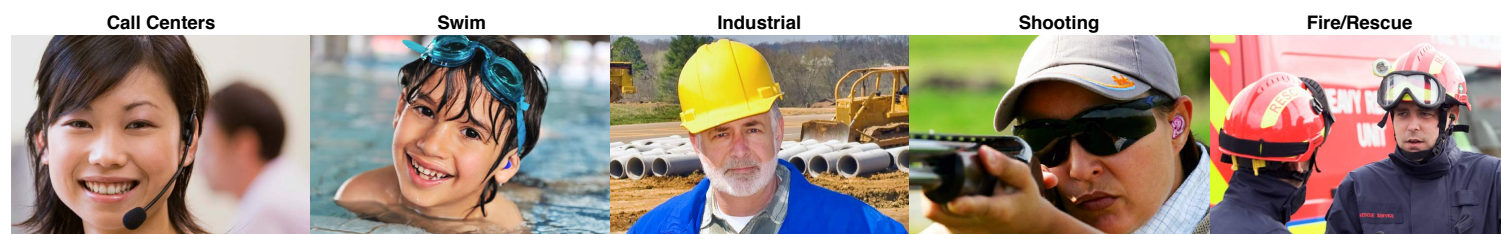
Need \$500k seed for:
\$50-100K Factory Tooling
\$125-200K Manufacturing
\$150K Operations Prior Beta
\$175K Operations During Beta

Management

Scott McGregor, CEO
Dr. Bob Glass, Ph.D. COO
Akien Maclain, Engineering
Grace "Tig" Sylvan, Marketing

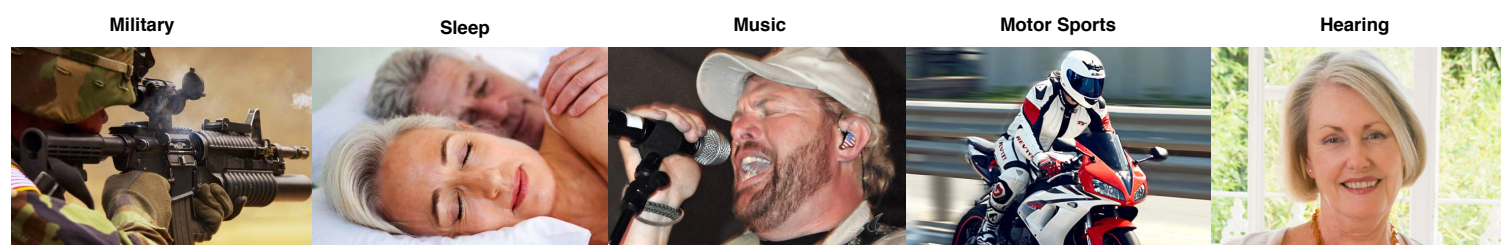
Advisors

Russell Brand
Steve Haber
Etienne Coulon



The Custom Fit Ear Gear Market

There are a wide variety of custom fit audio products including: hearing aids, consumer music headsets, musician's monitors, personal & tactical communications headsets, hearing protection & noise reduction ear plugs. While the electronics and channels for these devices vary, the manufacturing process is identical for all the custom fit components.



Market Size

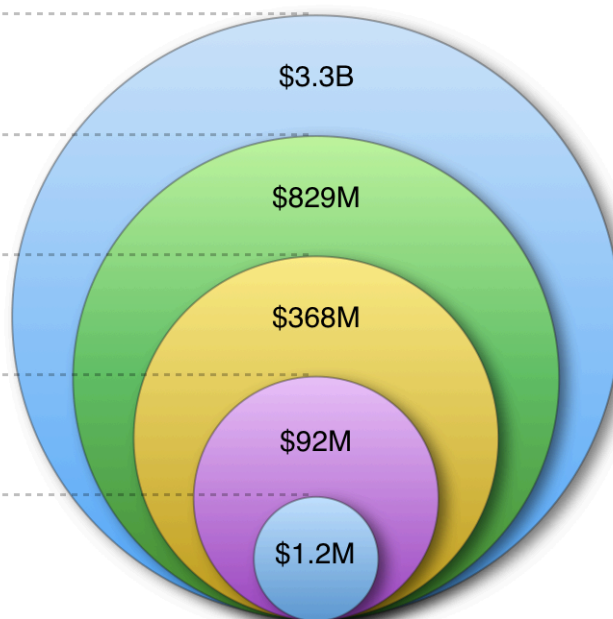
PAM - Conversion from Generic to Custom Fit
New Consumer Market

TAM - Worldwide Point-of-Sale Locations
Scanner, CAD, and Print Service

SAM2 - Worldwide Point-of-Sale Locations
Scanner Service Only

SAM1 - US, Canada & Europe Manufacturers
Scanner Service Only

SOM - Minerva LOI for 450 Scanners



While it is unlikely that we would win 100% share in any of these POS Custom Audio markets, it is worth noting that Luxottica has achieved 80% share in the POS prescription eyeglass market, and Dr. Scholl's Custom Fit Insole scanners has nearly 100% of the POS Custom Orthotics market.

Why Now?

Need: The Hearables revolution is just beginning. Wearing ear gear all day long is becoming common now.

Difficulty: It turns out to be very difficult to create a desktop 3D scanner that is low cost enough for low volume retail locations, but also high precision enough for great fit for custom ear tips. We just spent 5 years solving that problem.

Technology: Affordable 3D printing for local service bureaus or in-store locations, with the right materials for ear gear is just coming on line.

Cloud Computing: 3D scanning ear geometries is computationally expensive. Only recently has low cost cloud computing and internet made this affordable. This allows us to keep costs low without sacrificing the accuracy required.

Business Model

We deliver our scanners in a *hardware-as-a-service* model. This creates recurring income, and is an easy financial comparison to the status quo solution we are replacing: Shipping physical impressions across the Pacific takes days and costs \$20 per pair or more. Shipping models across the Internet using our services takes minutes and costs far less. Our Service model also eliminates technology obsolescence risk for our customers, and allows us to transition them to new tech and retain them as our customers.

Customers - Interest - Sales

We have **Letters of Intent** for **450** scanners in the UK, and **10,000** mobile stores in Asia (kiosk solution).

Initially we sell direct to the small number of existing custom ear tip manufacturers, who will push our scanners out to their existing retail and medical customers. Later, we will work with these manufacturers to enable them to send their ready-to-3d-print models to regional 3D printing hubs we operate, allowing them to eliminate return shipping and complete manufacturing "in about an hour" of scanning. Later we will partner with consumer brands that currently are unable to offer custom fit solutions to bring those higher end products into retail stores they serve.

Competitors

Today, our POS scanning service (which moves digital models in minutes) has to outcompete FedEx and UPS. Regarding 3D scanners, we designed ours to be high precision and cost effective for the low unit sales typical of point-of-sale locations. Competing scanners for factory use (3Shape, Siemens, SmartOptics) are too large and expensive, and inexpensive scanners (David) are not accurate enough to create properly fitting ear gear.

Competitive Advantage

This is a disruptive innovation play which will pioneer a new market segment by switching from a supply chain that move atoms to one that moves bits. In that sense it is akin to the introduction of POS optical manufacturing into mall stores (Luxottica/Lenscrafters) and Dr. Scholl's kiosks that replaced Podiatrist to Custom Orthotics Lab physical shipments.

Technology barriers:

- Low cost scanning of ear impressions and ears is technologically difficult.
- 1 Patent issued, other patents pending

Market barriers include:

- The Innovator's Dilemma - Competitors can only sustain their high profit margins with their current high priced factory scanners. Competitors won't move down market and sacrifice their high margins.
- First Mover + Network Effect => Virtuous Cycle
- Momentum / Switching cost



Partners

- We have already partnered with Minerva Labs in the UK who can provide us Cloud based CAD services we used in our beta tests, and we are developing alternative suppliers in the US and Asia.
- Currently we are planning to partner with an existing SLA/DLP Resin printer manufacturer. We have had preliminary discussions with Form Labs, and anticipate being named a reseller, or being given special terms for incorporating their printers in our POS 3D printing services.
- We have had preliminary discussions with 3D Hubs, who can provide us with a means to deliver print jobs to existing service bureaus in many metropolitan areas world wide, for customers who don't their own 3D printer.
- We need to develop relationships with one or more retail chains (e.g. Costco Hearing Aid Centers, Walmart, Walgreens, CVS, RiteAid, Guitar Warehouse,) to help us pioneer new consumer markets.
- We need to develop relationships with one or more audio brands (Ultimate Ears, JH Audio, Etymotics, Beats, Kenwood...) who would like to partner with us on distributed manufacturing of the custom ear tips for their products at or near stores.

Company Stage & Team

- We are are a **restart** of a company I founded 5 years ago. I am just concluding an amicable split with my cofounder which gives complete access to all the IP we developed, sole ownership of any patents pending (and shared ownership of the one issued), and rights to continue working with all our previous partners during the beta test. We also are acquiring parts and work in progress scanners.
- All the technical founders who developed the hardware and software for the previous company are founding members of the new company.
- Our founding management team is all experienced Silicon Valley veteran executives with both start-up and Fortune 100 management experience.
- The scanner hardware and software went through multiple revisions prior to completing a successful beta test with target users. We have a design for the scanner we want to manufacture and we have a team member who does contract manufacturing in China who is ready to take us to his factory upon payment of the initial factory set-up costs (\$50K).

Intellectual Property

- We have one issued patent that is shared with our previous company. We have other pending patents which are solely ours. We anticipate that we will develop additional patentable inventions.
- The base technologies are old enough that patents covering them have long ago expired. It is now a question of specialized patents, which may or may not have to be engineered around or licensed.



Additional Information:

Product demo video: <https://tri-di.com>
Product & market pitch vid: <https://bit.ly/tri-di1>
Investor & ROI pitch video: <https://bit.ly/tri-di2>
Keynote pitch deck: <https://bit.ly/tri-di3>
Investor Overview: <https://bit.ly/tri-di4>

Our Mission:

- ❖ We want to deliver a product that will give relief to many ears as Dr. Scholl's did for feet.
- ❖ We see a huge opportunity to pioneer and dominate a new market, as Dr. Scholl's and Luxottica have.