



UNIVERSITY OF BRESCIA

RISE LABORATORY

Research & Innovation for Smart Enterprises

Project abstract

“3DPRINTING FOR HEALTH&WEALTH OF INDIVIDUALS”

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PROJECT IDEA



- ▶ To obtain **full customized medical devices** from three-dimensional scan of individuals (**paediatric age**) biometric data.
- ▶ Devices are obtained with additive manufacturing techniques, such as 3D-printing.
- ▶ Devices are made with a **new biocompatible and anti-bacterial silicone from recycled materials.**



MAIN ADVANTAGES



- ▶ **Extreme customization** of the outcomes to each subject's biometric features through the usage of **3d-scanning** and **3d-printing** devices
- ▶ **Environmentally sustainable**, through the use of **recycled materials** and **waste minimization**
- ▶ **Economically viable**, through a **new business model** compatible with the extreme customization sought



MAIN INNOVATIONS



- ▶ **A new biocompatible and anti-bacterial silicone** from recycled materials, workable with the new 3d printer and usable in health & wealth contexts
- ▶ **An innovative 3d printer**, able to work and build objects using silicone, starting from the up-to-date technology, overcoming the current limitations
- ▶ **New recycling methods** suited for the silicon to be added in the 3d-printer
- ▶ Usage of **three-dimensional scanners** capable of shaping the biometric data of the individuals with the level of accuracy required



EXPLOITATION



- ▶ **On-demand printing** of pieces required in H&W contexts (e.g. inhalers, dental devices)
- ▶ **Material characterization** tests on behalf of third parties
- ▶ **Production process** technological and economic feasibility analysis, on behalf of third parties
- ▶ ...



APPLICATIONS

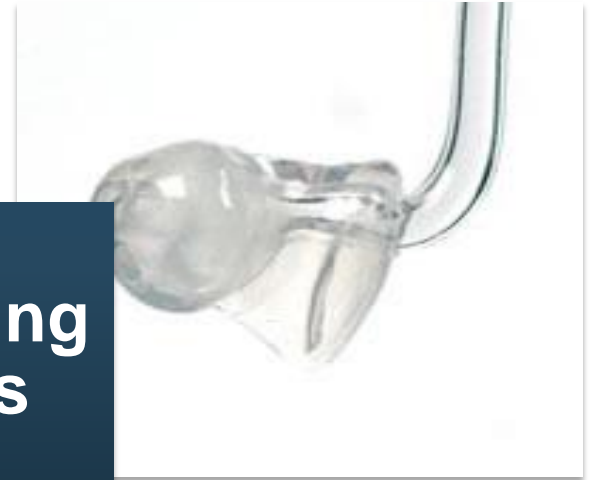
[...] WACKER sees this technology being used in the medical field, to create custom implants for patients, live during an operation. Potential devices include custom respirator masks and hearing aids, as well as personally-tailored nose pads. And its transparency would lend it a number optical applications, including custom lenses.

3D Printing Industry, August 10, 2015

**Dental
devices**



**Hearing
aids**





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Thank you for your attention!

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