Project Close Report

SHUTTLEWORTH FOUNDATION

Project name

Glia Gaza Office

Fellow(s)

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Date

August 28, 2019

Project description

To establish a Gaza office that can follow and implement the research work of Glia in Gaza hospitals.

General report-back

The Gaza office of Glia was set up to ensure that knowledge and research developed in the Canadian office would be translated to the field. As well as serving as an acid test of some of the ideas of manufacturing in a third world setting, the Gaza office was ultimately able to create its own research projects, culminating in the creation of the tourniquet and desktop injection molding.

Deliverables achieved

The following deliverables were achieved:

- Setup of a remote office for the Glia project in Gaza
- Setup of solar power for the office
- Hiring of office manager and two engineers
- Implementation of stethoscope project

- Implementation of tourniquet project
- Desktop injection molding
- Creation of 3D printing culture in Gaza

Deliverables not achieved

We have not yet achieved full sustainability of the office in financial terms.

Measures of success

Did you see changes in behaviour that you expected to see?

We saw several changes in behaviour that we expected. The culture in Gaza was on a precipice in which it could have fallen in the direction of highly proprietary device design. Patents and intellectual property arguments seemed to trend toward a selfish approach to devices, sometimes with the delusions that this type of model resulted in better engineering and distribution for common people in Gaza and elsewhere.

The Glia project managed to reset the expectation by proving that even in a devolved society with maximum pressure, a Free/Open approach was not just workable, but could create devices and technology that had not yet been created using other approaches.

Glia approached the problem from a multi-dimensional perspective in which the local economy would benefit, local creators, patients, and the general public. The expected and unexpected consequences have been:

- A wide knowledge of 3D printing within the engineering community in Gaza
- World-class expertise in 3D printing, plastic recycling, and alternative energy to power the latter two
- Introduction of 3D printing into the public high school curriculum
- A layperson understanding that 3D printing is a limited solution to blockade-related issues

Did you see changes in behaviour that you would have liked to see?

NA

Did you see changes in behaviour that you would have loved to see?

We did not expect the school curriculum to adapt so quickly to the presence of 3D printers in Gaza. As well, the project's near-total integration into the Palestinian engineering community was a pleasant and welcome surprise that we did not expect so quickly, if ever.

Budget

	USD$
Approved budget	42,585
Actual spend	45,530
Difference	-2,945

Comparison and feedback: Overspend by $2,210.62 was due to forex difference.

Intellectual property outputs

The Glia Gaza office contributed to the Stethoscope design, introducing an easier way to integrate earbuds. As well, parts were created in OpenSCAD and released as open source to facilitate reproduction and modification by others.

The Glia Gaza team also created from scratch the 3D printed tourniquet, and released designs for a locally-made and easy to manufacture filament extruder that can generate several kilograms of filament per day, several multiples more than other open source designs at the time.

Learnings

There were many learnings of both the team and the Fellow related to the Gaza office. The office had a typical startup trajectory, beginning with highly dedicated but disorganized individuals whose creative energy and knowledge was needed to bridge the first steps of the project.

Thereafter, the project had to transition into a small business, which forced some difficult decisions such as the firing of a disruptive team member.

At this stage, the Glia office is transitioning to a medium-sized business, with clearly defined roles and functions and a “best person for the job” approach rather than a “whoever is nearest” approach.

It is not obvious that the Glia Gaza office will succeed, but I believe that we have created the best conditions for that to happen at this time. The main future challenges will be balancing creative and engineering attention with business attention that generates funds to keep the office running.

Exit/Sustainability/Viability

With revenue generation developing, this project will end with no dependence on the Shuttleworth Foundation for the Gaza office. The products are:

- Medical device consulting
- 3D printing and engineering consulting
- Medical device sales
- Medical device supports (such as creating spare parts)