Internet of Things (IoT) Makerspace

St Peter's Mbare Secondary School

Interim Report

1. Date of report (month/year)

April 2016

2. Activities Undertaken During Reporting Period

i. Engaging Stakeholders

A number of visits were made to our partner school, St Peter's Mbare to fine-tune the project plans to their setup. Meetings with officials from ministries of Primary and Secondary Education and Public Service are also on-going to make public events official in the makerspace.

The broader local community was also reached out and engaged through social media with the setting up of a Facebook page and a Google community.

ii.Procure Toolkits

We managed to procure a total of 22 Beginner Kits for Arduino from DFRobot in China at a total cost of $1 6245. 04 of the kits were handed on to the school and one was retained for training preparations.

iii. Setting up Makerspace

The team started the process of converting the school's computer laboratory at St Peter's Secondary School into a makerspace. All computers, which are currently running Windows XP, had the Arduino IDE installed. They were set up to ensure the Arduino IDE communicates with the Arduino microcontrollers using the COM serial port.

iv. Technical Training

a. Train-the-trainer

A total of six trainers started Arduino training on the 13th of April 2016. Further training will take place at least once a month of Friday afternoons.

b. Student Training

A total of nineteen (19) students attended the initial Arduino training session on the 14th of April 2016. They meet with their teachers every Thursday and also get support from the society's team monthly and on demand if necessary.

3. Project Performance

i. Project Schedule

The project started six (6) weeks after its scheduled start date. The initial delay was a result of challenges encountered at the initial partners, Herintals. A further delay was a consequence of delays in approving public events from the Ministry of Primary and Secondary Education.

ii.Project Management

The Internet Society project team did a good job in carrying project activities that included bank documentation, procuring the toolkits, planning events, visiting partner schools as well as engaging government officials and other stakeholders.

iii. Financial Management

As a result of financial discipline, the team managed to stick to the project budget for the initial phase of the project as reflected in the financial statements.

4. Project Outcomes & achievements

i. Technical Training

We conduct a successful train-the-trainer session on the 13th of April. The trainer made a follow-up session with the students the following day.

ii.Trainees' Engagement

The ultimate objective of a makerspace is to engage students in the learning process. Initial observation showed the students were engaged especially after creating real artifacts in some interesting projects.

iii. Computer Society of Zimbabwe IoT Presentation

Owing to publicity of our initial training sessions on social media, the team was invited to speak at a Computer Society of Zimbabwe (CSZ) Internet of Things (IoT) function on the 26th of April 2016. CSZ is national community of computer professionals from industry, academia, non-governmental bodies and government. It gave the team a chance to publicize the project work in particular and Internet Society in general.

5. Lessons learned and disappointments

i. Change of procedures in getting Government approval

The change in protocol in getting authorization from Government was huge disappointment in the smooth execution of the project. We have observed that working with a government affiliated school is much difficult than working with a private. However we resolved to persevere in the face of these discouragements as we learnt that the government affiliated schools are apparently the schools in most need of this project.

ii.Procurement Costs

Customs duty is now no longer waivered on the society. However if the school's name is listed as beneficiary the tax authorities will not levy customs fee.

6. Changes in the design of the project and implications for future work

i. Public Events to follow Training

The initial plan was to launch the project officially through a public project launch. However owing to delays from getting authorization we have had to start off with the technical training sessions. The Makerspace and Entrepreneurial workshops have also been moved to the second quarter as a result of the delays from government.

ii.Direct Interaction with students

The team will increase the frequency of interacting with the trainers as it was observed that software programming is a challenge to most of them. Consequently the team will have to directly interact with the students as the trainers gain depth in programming.