Tech-share

Computer literacy for rural area high school students in Uganda.

THE BUSINESS PLAN
ACARA Challenge 2014

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Executive summary
According to the allAfrica.com Ugandan status report 2012, the computer illiteracy level for Uganda is 85% with a higher ICT literacy status in urban areas than in rural areas. Uganda has about 36 million people and 87% live in rural areas, with only 2% of these people computer literate. There is a very wide digital divide between the urban and rural people, ‘the rich and poor kids’.

Tech-share is a mobile computer laboratory that will enhance technological innovation in early stages of high school students’ lives in Ugandan rural areas. The word mobile describes the movements involved in making the training possible, to open a window for the students to becoming computer literate and better still, self-sustaining.

Tech-share is aimed at helping these students in rural schools that have been ignored for so long by people who usually refer to the areas as ‘hard to reach areas’ become computer literate. Tech-share will help them learn something that could change their lives by providing affordable and available computer training, with the trainers moving to the school locations. These students clearly have a lot of unrealized potential and Tech-share will unleash this and open up more access to information for technological innovation, stimulating poverty reduction and employment realization for self, community and national development.

Background
Computer literacy, in general, is being knowledgeable about the computer and its applications (Rochester & Rochester, 1991). Such knowledge appears to have two dimensions: conceptual, and operational (Winter, Chudoba, & Gutek, 1997). The conceptual dimension includes an understanding of the inner workings of a computer or general computer terminology. Without such knowledge a computer user would find it difficult to figure out any system problems, or to learn to adapt quickly to new systems or software. The operational dimension refers to the necessary skills a user acquires, through training and practice, in order to operate specific systems to complete specific tasks.

The students in the ‘hard-to-reach’ areas are in a situation where they think of studying the school subjects and go home every day or stay at school for the boarding students; and they await luck to come their way. They do not make a long term plan because they have no means. They have no way to hope to get a good job some day or to be able to live in a better area because they are from families that are very poor and needy. Tech-share is an idea that I have developed because of my passion for helping the less privileged people and this specific venture is inspired by my computer engineering education and the fact that computer knowledge is becoming more vital in the world.
Problem statement

Experience and findings
I am born and raised in Uganda and have had the experience of studying in limited resource environments. I have also been in remote area schools where students have not seen or touched a computer. There is a big gap between high school and university. These less privileged students find it so hard to cope with the need to know about computer usage in higher institutions of learning. For the few who get into technology related fields, a lot of time is spent on teaching them the basics like starting a computer and using word processors yet this time could be used for more innovation.

The students who are more privileged have a chance to go to better schools and at least have seen a computer. Computer studies have been made compulsory in the country but it is very unfortunate that the law makers seem to stop at passing the laws.
I attended the second Ugandan National Communications Conference in September 2012 where students, researchers, developers, and practitioners are provided with a platform to address new research challenges, share solutions and discuss issues relevant to the technology and communications sector and have been a leader for most of my time in school.

I have been able to see that unless we get people who can think of others who are less privileged, Uganda will remain a developing country and may never get developed. It is unfortunate too that some people in the top leadership positions are also computer illiterate but they got there because someone was their relative, and hence cannot see the value in helping a stranger become computer literate.

A typical rural school
The high school students, Secondary school as it is called in Uganda, are between ages 12 and 20 and the schools have a population of 500 students on average with a teacher to student ratio of 1:40. The teachers read out class notes or write on a black board; the system is less learner oriented and classrooms are mostly small with less furniture than would be comfortable for students.

The school has two sections; Ordinary level, and then Advanced level. Many students in these schools study until they finish Ordinary level, a few get to Advanced level and others drop out of school to look for work to do, for the boys, and the girls get married soon after. The Advanced level tends to favor more of career-decided students and many of these students due to lack of resources do not have hope for anything sustainable in academic careers because of their standards.
A typical rural school classroom
These areas have no electricity and actually some of their classrooms have no windows. The lack of electricity will be offset by using generators which we simply need to fuel and power on.

The environment in which this venture is to be implemented has its own cultural and economic challenges around implementing a solution like this which include people’s mentality, poverty, and the fact that the political leaders who decide where most of the country’s money goes ‘do not see’ some of these pressing problems. The larger scale issue affecting many graduates is the low employment opportunities available, which is highly attributed to the education system we have where many students finish school and yet cannot do anything practical. This means most graduates cannot create jobs but have to seek them even though they are not that numerous. There is evident need for more students in technical fields, and more so Information and Communication Technology.

**Solution description**

Tech-share is a mobile computer laboratory where trainers (computer engineering students and graduates, and some staff from Mbarara University) will move from their location to rural area high schools in western Uganda to train students. The target is these less privileged students that need the help to be better.

**Phase 1**

**The customer**

For the pilot, our implementation will be in two mixed schools that are located 1 hour apart in Bushenyi district (South western Uganda) and have 500 students on average. Our target customer is the schools themselves, and specifically the students. The schools will get funds from the parents specifically for this computer skills training.
Technical aspect

Trainers

The trainers include three computer engineering graduates and two staff members from Mbarara University in western Uganda. They will move to the school locations three times a week to do a 4 hour training for a year in the two schools. They will carry out the evaluations based on what the students are able to do on their own per month by giving them practical tests and quizzes. At the end of five months, surveys will be done to obtain feedback and the findings will help us do better during the second half.

Skills and programs

The initial training involves basics of starting and shutting down a computer and the usage of computer accessories.

The programs to be used include Microsoft word processor, Power point, Microsoft access, and publisher which are basically desktop applications running on windows 7 operating systems. We will later introduce Internet browsing in the second half of the training using dialup connections which are the most feasible in the areas we will be in. We will introduce programming in the second phase.

Phase 2

In the second year of operation, Tech-share will operate in 5 schools and the revenue will scale up by 5. Students will still pay $20 over the period of an academic year and since we will be much stable, the expenses will scale down by one half. We will have 25 computers and the trainers will be ten, so that we are more efficient. We will have less expenses because we plan to involve the schools in cost-sharing for generator power, and whatever else they can afford alongside the training fee.
We will have schools appreciating the value of tech-share’s input, have a main location/office where people can find us physically and will have impacted over 1000 students’ computer literacy.

We will also begin to lease out the computers to the schools so that they can pay over a period of three years to help keep the students practicing and this will inspire the purchase of computers in some of the schools.

We will have more rural area high school students in technology related courses like computer science, engineering and information technology in higher institutions of learning.

The increase in digital illiteracy will trigger more innovative solutions to the Ugandan community’s problems, and get more students grow up as job-makers rather than job-seekers. This is our aim, to see the less privileged students have a brighter future.

Tech-share will give public acknowledgement to schools and organizations that will partner with us and any individual donors that can help, and we will always remember why we started.

**Competitors**

There are some existing computer training centers in the western region but they are only in urban areas, and are very expensive and stationary. These clearly favor people who are more privileged financially. They have scheduled training depending on how the customers come in and are not specific to high school students. These are the main potential competitors Tech-share has. They do a very good job but the fact that Tech-share wants to take the services to the students that do not have as much money in their own locations, makes me confident that this will not be much of a challenge.

**Prospective finances**

Each student will pay $20 for the entire training program which will be spread across one academic year, which is 10 months. For the two schools, this will be $20000 revenue that will help in maintenance of the equipment and paying the trainers.

The expenditure is quite big at the start because we have no resources but as the revenue comes in, we’ll use the money mainly for maintenance, salary and transportation. *(Details in Appendix)*

**Risks and Assumptions.**

Given the fact that the students are from poor families, the schools may feel like it is a big task to make the training sustainable due to the costs and maintenance requirements. The biggest risk is not identifying some flaws in our system or operational procedure during our pilot phase that would subsequently reduce profits when scaling up our system to its full size. Our pilot will help us to test our assumption that even rural school students can attain computer skills without affecting their families’ needs.
Conclusion

Tech-share will mainly be able to carry this venture on because we have the expertise, the will and the heart to help these students. We will do everything we can to make the training affordable even to the poorest student.

I am leaving for Uganda on May 19 this year and will immediately meet with the five trainers that I have already been in touch with while here to move forward. We only lack the start-up capital, which is $25,000 because the schools are already in place and the leaders know they have this problem. As soon as we have a minimum of five computers, a generator and we can transport ourselves to the schools, we’ll set dates to start the training. I feel this will begin as more of volunteer service and it’s where our joy will come from; doing something for others because we love to help them too.
# Appendix

## Prospective finances

For the pilot, to help us test the possibility of a fully functional system, the costs here are mainly start up and material costs. Phase 2 will have the expenses scaled down by one half and revenue scaled up by five.

## Pilot finances

### Yearly Income

| Training fee $20/student x 1000 students | = $20,000 |

### Expenses

| Transportation (Van purchase $15,000 and fuel $5,000) | = $20,000 |
| Equipment purchase for 3 computers at $500 each | = $1,500 |
| Power generation (Purchasing a generator & fueling it) | = $1000 |
| Maintenance (for the computers, the van and generator) | = $2000 |
| Advertisement | = $500 |

**TOTAL**  $25,000
Uganda on Africa’s map

Bushenyi district on the Uganda map
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