FEASIBILITY

VISIBILITY

STUDY

KITUIBITS

1

PREAMBLE

This report is to describe the progress during the period 21th of October – 30th November, in which Lieke Raes, Hope Freedom, Diedeke Bours, Esther Muthoni, Wout Michelsbrink and Bendict ...... conducted a visibility study on the possibilities of starting a new educational program located in Kitui Town – Kenya.

Target group for this report are future groups who will work to further develop this program, SASOL board and SASOL management and involved educational facilities. This report will also be able to give a first estimation to possible sponsors on the future finances and planning.

During this report the name KituiBits will be used frequently, this name refers to the program SASOL is developing and is not the final name yet.

Writing this report we want to take the opportunity to thank Nairobits for their example and inspiration, SASOL for the possibility of conducting this study and all the persons who helped us find the information which was necessary to realize this report.

Lieke, Hope, Diedeke, Esther, Wout and Benedict.
Monday, 16 November 2009, Kitui – Kenya.

TABLE OF CONTENT

1. ASPECTS OF THE GROUP

KituiBits is an initiative of SASOL (Sahelian Solutions) to empower the youth of nearby localized CBO's (community based organizations) to improve their own prospects as well as help their community develop.
KituiBits is based on the concept of Nairobits, a program which has started in 1999 and is the blueprint for this project.
The project will provide an educational course which includes a year of lessons on life skills as well as web design and or ICT skills.

1.1. Mission

The mission of the program is still to be defined but for now the following suggestion has been named: 'To empower and support community structures and skills for improved livelihoods.'

1.2. Vision

Likewise mission the following suggestion has been made which is not yet defined as the vision to be: 'To empower the youth on becoming self sustainable by providing an educational program on life and ICT / web design -skills.'
1.3. Goals and objectives
For the program to succeed the following goals and objectives have been set:

1. to start June 2010;
2. to involve CBO's;
3. to help youth which otherwise would not have had an opportunity to im prove their prospects.

4

1.4. Selection

For this program to succeed on helping the youth, the youth will need to make progress after completion of the courses. This means the students will be able to get a good job and return the lessons to the community.
For the youth to get jobs after completing the program the companies will need to be certain the students will live up to their expectations and first impressions.
For the students to do so we can only have the students with the highest change of a successful completion enter.
For the students to have a change of a successful completion they need to be supported by their community, so not only the student has to be chosen carefully but also the CBO's will need to be selected.
This means we have to select our both our CBO's as our students.

For this selection process we have written down the criteria for both the students as the CBO's to live up to before being considered a possible submission.

1.4.1. Student

The criteria for students to enter the KituiBits program are:
- The applicant must be between the age of 18 – 23;
- For the program to create a balance on providing fair opportunities their will have to be a 60%-40% female - male balance;
- The applicant must have completed all forms of primary school;
- The candidates must be able to prove that they did not had the possibility to attend secondary school during the last two years;
- The applicant must be willing to return their new skills and other knowledge to their community;
- The applicant must be the type of role model other youth will look up to;
- The applicant must be able to prove themselves on conditions of dedication, creativity, motivation and the ability to learn and perform.

Not obligated but recommended come recommendation letters from former schools, religious leaders, government officers and CBO's.

1.4.2. CBO

Criteria for CBO's to fulfil before being considered a possible source for students are:
- Exist for at least two years before any youth is admitted to 'KituiBits';
- Have a clearly defined mission, vision and goal. Its structure should include a representative with whom 'KituiBits' is able to communicate.
- Be focused on improvement of live standards of the whole community in order to empower the disadvantaged members of that community. 'KituiBits' focuses at youth aged between 18-25;
- Lay out information to 'KituiBits' about the number, age, level of education and any necessary information about the youth within the CBO's reach;
- Be able to present at least 60% of female candidates for the interviews. In case a CBO is not possible to attain this, they have to present a reason able explanation;
- Be able to select the best candidates within the CBO's reach on yearly bases;
- Be able to prove that the chosen candidates were not able to further them selves without any help;
- Be able to prove that the candidates selected by the CBO's were in fact the best candidates for this training course;
- Lay out concrete plans on how the trained youth will share their skills with those that may not have had a chance to attend the training;
- Give feedback to 'KituiBits' in terms of the needs of the youth, offering opportunities to other youths, providing role-models, alleviating poverty by helping families and extended families.

Just as well as the persons who will be taking or undergoing the course need to be selected there are even more strict criteria on the persons who will be providing the courses or arranging them.
For the course to be successful there is a need for a manager to arrange all the necessary daily needs, while the second person, the teacher, provides the material, lessons etc. to the students.
The project relies on the two persons as on no other, they are the key to making this program work.

1.4.3. Teacher

For the teacher to be able to attend all that is required he or she needs to:
- Be motivated to invest in this program;
- Have life experience and ascendance to ensure credibility;
- Have much knowledge about ICT and computers so if there will be a problem he/she will be able to solve it;
- Have knowledge on Windows
- Have knowledge on Adobe and the packages used to teach web design;
- Have minimum 2 years experience with the web design, animation, graphic design, etc.;
- Be able to handle drop out youth (more difficult to manage) and connect with on a level to invite them to develop themselves;
- Be willing to come and live in Kitui
- Be willing to sign a long-term contract with SASOL
- Be creative
- Be flexible
- Be disciplined
- Be dedicated
- Be consistent

1.4.4. Manager

For the manager to be able to attend all that is required he or she needs to:
- Be motivated
- Have a minimum age of 30 years;
- Have the knowledge on organizational structure
- Have knowledge on computers
- Have (a little bit) knowledge on web design
- Be a person people
- Be good with communication;
- Confront the situation when needed;
- Be able to sign a long-term contract;
- Be willing to come and live in Kitui;
- Have a structured way of working;
- Be disciplined ;
- Be decisive.

2. SOFTWARE

The project is based on the web design / ICT skills the students get thought during the courses, for these skills to be thought there needs to be software and hardware to support the educational process.
For the software there are the following possible programs:

2.1. Linux

Linux is one of the operating systems which is considered for KituiBits. To get a good bases on which there can be made a decision we gathered the information on the pre- and cons of the different programs, these are the ones for Linux:

2.1.1. Upsides

- Because Linux is downloadable from the internet for anyone, Linux' most attractive aspects is that it is free which will make a big difference.
- Due to the fact that there is a access guard on Linux, no one is allowed to enter or change the system without a password, this means that viruses and bugs cannot access the system without the password. This means that the risk of infection is very slim when using Linux.
- Because Linux is downloadable from the internet this also means that the system is an open source system. The benefit for users is that all questions or problems are able to resolve by looking it up on the internet.
- Not only Linux itself is free, but all programs which are suitable for Linux are free downloadable as well.
- Extensive documentation is free for anyone to read about Linux on the internet, which means that everyone who is interested can become as professional with Linux as they desire.

2.1.2. Downsides

- Because Linux is not a programs which is used by most professional companies, the students who will graduate on Linux will have difficulties finding jobs when they only know of Linux instead of the commonly used programs (such as Windows and Adobe).
- Despite of the many benefits Linux has not many people are familiar with the systems' possibilities which means, finding someone to educate the students on Linux will not be possible.
- The programs most companies use for web design and related disciplines are not able to run on Linux.
- While being an open source network this also brings disadvantages, every program and problem will have to be looked up while there are few written guidebooks on the system, this means that when the connection to the internet fails, solving the problem will become a vicious circle.
- Due to the fact that the system is not widely known there also is very few experience with the system.
- Linux keeps improving and adapting to its influences, this resolves in the fact that Linux needs regular updates.

8

3.HARDWARE

Besides software the program also needs hardware for the software to run on. For a complete and functional support system the following needs to be present:

To have the best of both worlds and get the safest and most secure access and system possibilities it is advised to have an active directory as a network which means: one computer will be the server which supplies all the other computers with the needed memory capacity by storing all the data after use on that server. This server also is the connection to the internet which then again connects the other computer (clients) to the internet.

The server does not require to be able to run the (design) programs the clients will use so it will require less RAM then the clients do.

For the students to work with they use the clients (computers), on these they can work with the installed software but they will not be able to access them and alter programs, all the data will be securely stored on the server. This then again means the clients don't need much of a hard drive because they will not store the data on the client itself.

By having the data stored on the server and while using account names the student will be able to access their personal data from every client.

This system structure requires the following:

3.1. Hardware server

- 1 computers
- 1 screen
- 1 keyboard
- 1 mouse

For the server it is possible to run Linux while the clients use Windows and Adobe, this means the server does not need a lot or RAM because Linux is a lighter operating system to run. The best version of Linux to run on this server will be Linux 9.04, also called Jaunty. The system requirements for Linux 9.04 are:
- 700 MHz x 86 processor
- 384 MB RAM
- 8 GB free disk space
- Graphic cart with resolution 1024 x 768
- Network or internet connection and sound cart comes recommended

Minimum system requirements for server installation
- 64 MB RAM
- 500 MB disk space

3.2. Hardware client

For the students, manager and teacher to work the will be working with the client computers, these need more RAM while Adobe requires this while they need less memory o their hard drive while the will not store the data themselves.

- 12 computers
- 12 screens (size, kind?)
- 12 keyboard
- 12 mouse

10

For the clients to run programs such as Windows and Adobe they need to obey certain systemrequirments:

- Intel® Pentium® 4 (1.4GHz processor for DV; 3.4GHz processor for HDV), Intel Centrino®, Intel Xeon® (dual 2.8GHz processors for HD), or Intel Core™ Duo (or compatible) processor; SSE2-enabled processor required for AMD systems
- Microsoft® Windows® XP with Service Pack 2 or Windows Vista™ Home Premium, Business, Ultimate, or Enterprise (certified for 32-bit editions)
- 1GB of RAM for DV; 2GB of RAM for HDV and HD; more RAM recommended when running multiple components
- 20.5GB of available hard-disk space to install all core components (up to 1GB of additional free space may be required during installation); custom installing select components requires less space
- Dedicated 7,200 RPM hard drive for DV and HDV editing; striped disk array storage (RAID 0) for HD; SCSI disk subsystem preferred
- Microsoft DirectX or ASIO compatible sound card
- 1,280x1,024 monitor resolution with 32-bit video card; Adobe recommended graphics card for GPU-accelerated playback
- Some 3D features in Adobe® Photoshop® CS3 Extended require a Microsoft DirectX 9 capable graphics card with at least 64MB of VRAM; for OpenGL support, an Adobe After Effects® supported OpenGL 2.0 card (NVIDIA recommended)
- For SD/HD workflows, an Adobe certified card for capture and export to tape
- DVD-ROM drive
- Blu-ray burner required for Blu-ray Disc creation
- DVD+-R burner required for DVD creation
- OHCI compatible IEEE 1394 port for DV and HDV capture, export to tape, and transmit to DV device
- QuickTime 7.1.5 software required to use QuickTime features
- Internet or phone connection required for product activation
- Broadband Internet connection required for Adobe Stock Photos* and other services

3.3. Physical network

For the server to be able to store the clients' data and connect them to the internet the server has to be connected to the clients. For this network the following is required:

- UTP cable
- Switch (16 gates)
- UPS for the server

3.4. Back up

For the students to always be certain about the fact that the data they created will be safely stored KituiBits will have to back up their data. For them to do that there are several possibilities:

- By internet: uploading all files on a space KituiBits owns on the internet
- By backup tapes which on which the data can be stored on regularly periods (of for example one day or week, depending on the amount of data which will have to be secured
- Raid system by which you store all data life stream (constantly) onto several hard disks which copy themselves constantly so if one fails others will still keep storing all data

11

3.5. Physical security

For the important and fragile hardware to be safe from injuries due to physical contact or threats they need to be stored in a safe place. For example a separated room which is only accessible by key.

3.6. Power supply

For all this hardware to work they need one basic ingredient: power. For the system to have a guaranteed power supply the following is required:

- Extension cords
- UPS
- 1 minimum for the server: without it when there is a power interruption you will risk losing all data
- Additional ones for every client to preserve the data which are under construction at the time of power interruption

4. CURRICULUM

For the program to have a content there has to be a guideline to follow for teacher as well as students. This program consist of a curriculum of which a blue print already exists at Nairobits. This example can be used when developing KituiBits' curriculum.

Nairobits uses the following calendar during their courses.

Course 1
- During 5 weeks
- 60 students
- Beginning to indroduce the computer
- Microsoft office (basic pakket)
- Introducing the beginning of photoshop
- Photography
- (also life skills, reproductive, HIV/aids)

Course 2 Behind the screens
- During 5 weeks
- 30 students
- Introducing the internet and how to use it
- Online research
- Communication skills (building for the market)
- Blogging

This is the first e-course at Nairobits e-Learning Centre. Students learn basic design skills while producing a logo, a business card, a poster and a cd-cover for their future music shop.

Behind the screens consist of 12 lessons in which students learn the absolute basics of the computer, from using the mouse and navigating the desktop, to saving files and making your own text and image compositions. The course introduces the most common applications of the pc.

Course 3 Inside the web
- During 3 months
- 30 students
- Foundation web design
    - Neighbourhood project (individual)
    - Team project - cultural project
- HTML + Flash

Inside the web is the second course at Nairobits e-Learning Centre, and introduce first time users to the major aspects of internet use for information and communication, such as emailing, surfing, chatting, blogging and generally using the web for their own future. The second main aspect of the inside the Web course is uploading a personal profile, the results of individual research and a small website.

Course 4 Web Stars
- During 6 months
- 20 students
- Intensive web design
    - HTML+ course 3
    - CMS
    - PHP
    - MYSQL
    - JAVA
- Action scripting (flash + higher)
- Make 3 websites
    - Campaign
    - Portfolio
    - Real company
- Corporate branding
- Guest teachers from companies
    - Bring new skills
    - What's there on the market
    - Interact with the students

This course, which three sections design, tools and publishing- is an intensive visual design training which includes technical skills for designing and building websites.
Students draw, paint and photograph themselves and their surroundings, but also play with words, scenes and lifestyles. They are confronted with net art and online trends, and also learn the elements of layout and site design, navigation, usability and structuring information.
Students will also be familiarized with html, Dreamweaver, Photoshop and flash as well as PHP scripting.
This course, which is only for motivated and talented students who have completed course 1 and 2, lays the foundation for taking part in the Media Lab, and subsequently working for clients.

Internship
- During 3 months
- 20 students
- Employment

5. RESOURCES

6.1. Definite sponsors

Edukans Ex-Change

6.2. Possible sponsors

KEP LEC *Expertise*

Kenian Educational Program Local ~~Experience~~ Centre is the full name of KEP LEC. They offer no materials of money but they give experience, like teachers.
contact: 0723436617

Adobe

Adobe has his donation program. It's for schools in developing countries. They sponsor the Adobe Pakkets for free or for a very low price.
contact: kbokhoven@adobe.com

MCC *Committee*

Mennonite Central Commity is the full name of MCC. It's a Canadian organisation that is lokated in Nairobi.
they are willing:
-        To send a teacher and he is willing to stay a year. From august 2010 till July 2011.
-        They are willing to donate computers for the school.
-        Finance

Contact
Ron and Martha Ratzlaff
Representives for MCC Kenya
47 Rhaptaroad, Westland, Nairobi, Kenya
Email: mccrep@kenya.mcc.org
Office: 4443149
Mobile: 0726513226

7. CONCLUSIONS

After conducting a first basic research on the possibilities of KituiBits we find that there first of all should be next groups to conduct a research which is much more extensive.

These students will have to:
- Develop a curriculum which fits the circumstances of KituiBits
- Conduct a research on the demand for students with these skills
- Do a preliminary estimation on the costs

This project is so big that the input and requirements to make it a success should not be underestimated. This results in the following recommendations which we highly advise not to ignore!
- Select the manager as well as the teacher with much care and be selective. This project has no space for trial and error so everything has to be right at the first attempt, for this to be a reality we need persons who are persistent, clear and above all put the projects' interest before their own gain. Keep in mind that this is a job which demands a person with vision and understanding of how heavily demanding this job will be.
- Do not only focus on the students grades and achievements but keep in mind that a student needs a lot of motivation to make it through a course as de manding as this one.
- We recommend for the software to use Windows and Adobe on the client computers and Linux on the server. This way you will benefit from both optimally.
- Because this is a project which requires a lot of financial input we understand that it is tempting to reduce the costs but keep in mind that this may never effect the functionality or quality of the program, while this programs' success depends on its quality. Having said this we want to mention;
- Based on the high costs of this program it will only succeed with sufficient sponsors. The program requires:
    - Products: hardware and software donations
    - Skills: adequate staff members (using one of Nairobits previous students would be a very adequate person to teach the KituiBits students)
    - Money: to purchase the supplies which are not able to get donated.

After knowing what this program will require it will also be necessary to know if it is worth the up bring of this program.
To answer that question we say that everywhere in sub-Sahara Africa there is more than sufficient demand for development, knowledge and input to help the society grow. To have a solid answer on whether or not these student would find a job after completion relies on the quality alone because demand is most definitely there, but it is a demand for people who can really help the society grow and develop, which means that this program has the possibility to really contribute to the growth of individual persons and their communities when there are sufficient people to sponsor.

2.2. Windows

2.2.1. Upsides

- Windows is one of the most known and used operating systems on the world, which consequences into the fact that there is a lot of knowledge found everywhere on the technology behind the system, this means finding a teacher on Windows will be easy and professional.
- Because most of the companies who are involved in web design use Windows, most programs about web design are written to run on Windows (Adobe).
- The student will be able to immediately excess the labour market while their education has thought them everything the companies use so there is no need for restarting their education.
- Due to the familiarity of the system the system comes with a guidebook and there have been written many additional books which include most problems.

2.2.2. Downsides

- While Windows is more professionalised and comes with more tools to support, the program comes with a price tag.
- Due to the fact that Windows has no protection on its systems maps, and everyone is able to access those maps and alter their content, viruses find easy access into Windows.
- Windows keeps improving and adapting to its influences, this resolves in the fact that Windows needs regular updates.
- Windows is a operating system which needs a strong computer to support its heavy processing.

2.3. Adobe

As a program Adobe provides many possibilities to use for web design and other creative and functional applications. Adobe is only able to run on Windows.

2.3.1. Upsides

- As a program which was designed for everyone to use it is easy.
- Just like Windows, Adobe is well known and there consist a lot of knowledge on its applications, problems (and thereby it solutions).
- This knowledge can be found in many teachers, which makes it easier to find someone fit for the job.
- The labour market uses the same program which makes it easy to access the labour market for the student after completion of the course.
- There has already been a curriculum based on this software which will save a lot of time, effort and money on developing this curriculum.
- Due to the extensive use of Adobe the programs has been evaluated many times, resulting in a program which has been expanded and offers many possibilities.

2.3.2. Downsides

- The software can only run on Windows.
- The software is quite expensive when purchased.
- Because of its extensive possibilities the computer on which the program will run will need to be strong.

9