



VOIce-based Community-cEntric mobile Services for social development

Grant Agreement Number 269954

Deliverable No D6.9
Mobile Training Lab Business Plan final release

June 2013

SEVENTH FRAMEWORK PROGRAMME
THEME ICT-2009.9.1 – International cooperation



PROJECT DELIVERABLE REPORT

| Project | |
|--|---|
| Grant Agreement number | 2699542 |
| Project acronym: | VOICES |
| Project title: | <i>VOIce-based Community-cEntric mobile Services for social development</i> |
| Funding Scheme: | <i>Collaborative Project</i> |
| Date of latest version of Annex I against which the assessment will be made: | <i>18 February 2011</i> |
| Document | |
| Deliverable number: | D6.9 |
| Deliverable title | Mobile Training Lab Business Plan V2 |
| Contractual Date of Delivery: | 06 2013 |
| Actual Date of Delivery: | 06 2013 |
| Editor (s): | Pieter Verhagen (TNO) |
| Author (s): | Pieter Verhagen, Thomas Bachet (TNO) Franco Papeschi (Web Foundation) |
| Reviewer (s): | Stephane Boyera (Web Foundation) |
| Work package no.: | WP6 |
| Work package title: | Mobile Training Lab |
| Work package leader: | Web Foundation |
| Work package participants: | Web Foundation, TNO, PTIN, CRS4 |
| Distribution: | PU |
| Version/Revision: | 3.0 |
| Draft/Final: | Final |
| Total number of pages (including cover): | 39 |
| Keywords: | mobile, ICT, Senegal, Sub-Saharan Africa, training, development, voice-based technology, business, entrepreneurship, learning, e-learning, business model |

CHANGE LOG

| Reason for change | Issue | Revision | Date |
|-------------------|-------|----------|------------|
| draft version | V1 | 0.8 | 12-06-2013 |
| review comments | V1 | 0.9 | 13-06-2013 |
| Final release | V1 | 1.0 | 14-06-2013 |

DISCLAIMER

This document contains a description of the VOICES project work and findings.

The authors of this document have taken any and all available measures for its content to be accurate, consistent and lawful. However, neither the project consortium as a whole nor the individual partners that implicitly or explicitly participated in the creation and publication of this document hold any responsibility for actions that might occur as a result of using its content.

This publication has been produced with the assistance of the European Union. The content of this publication is the sole responsibility of the VOICES consortium and can in no way be taken to reflect the views of the European Union.

The European Union is established in accordance with the Treaty on European Union (Maastricht). There are currently 27 Member States of the Union. It is based on the European Communities and the member states' cooperation in the fields of Common Foreign and Security Policy and Justice and Home Affairs. The five main institutions of the European Union are the European Parliament, the Council of Ministers, the European Commission, the Court of Justice and the Court of Auditors. (<http://europa.eu.int/>)



VOICES is a project funded in part by the European Union.

TABLE OF CONTENTS

| | |
|--|----|
| Change Log | 3 |
| Disclaimer | 4 |
| Table of Contents..... | 5 |
| Executive Summary | 7 |
| Scope of Work Package 6: Mobile Training Lab..... | 8 |
| Scope of D6.9 business plan..... | 10 |
| | |
| Part 1: 5 possible business models for the Mobile Training Lab | |
| 1. VOICES – Mobile Training Lab Business models..... | 12 |
| 1.2 Business Model Canvas – Ultra-Light Mobile Training Lab | 15 |
| 1.2.1 General remarks..... | 16 |
| 1.3 Business Model Canvas – Full-fledged Mobile Training Lab | 17 |
| 1.3.1. General remarks..... | 18 |
| 1.4 Business Model Canvas – Entrepreneurship Minor..... | 19 |
| 1.4.1 General remarks..... | 20 |
| 1.5 Business Model Canvas – Platform-as-a-Service | 21 |
| 1.5.1 General remarks..... | 21 |
| 1.6 Business Model Canvas – Training Community..... | 22 |
| 1.6.1 General remarks..... | 23 |
| 1.7 General conclusions | 24 |
| | |
| Part 2: Business Plan for the Mobile Training Lab | |
| 2. Voices – Mobile training lab Business plan..... | 26 |
| 2.1 The business model for the Mobile Learning Lab..... | 26 |
| 2.1.1 The choice..... | 26 |
| 2.1.2 Elaboration of the business model..... | 28 |
| 2.1.3 Evaluation of the business model | 31 |
| 2.2 Financial business case | 31 |
| 2.2.1 Customers..... | 32 |
| 2.2.2 Revenues | 33 |
| 2.2.3 Operational Costs..... | 34 |
| 2.2.4 Capital expenditure (investment)..... | 37 |
| 2.2.4 Profit and Loss statement..... | 37 |
| 2.2.5 Conclusion | 38 |
| 2.2.6 Steps forward | 38 |
| | |
| Part 3: Appendices | |
| Literature | |

EXECUTIVE SUMMARY

The document D 6.9 (Mobile Training Lab Business Plan Final Release) highlights the results of the VOICES Consortium's WP6 activities to define which business model(s) would be best suited to develop and sustain a mobile training lab in a Sub Saharan African context.

In order to define the best suited business model, three iterations of the mobile training lab deliverable (D 6.7, D6.8 and D6.9) have been delivered, focusing on different phases and aspects of a business model.

In D6.7 the business model building blocks – key elements in the offering of a Mobile Training Lab have been identified, based on both Western as well as African case studies.

In D6.8 these components and lessons learnt provided qualitative descriptions of possible business models of the mobile training lab. The range of possible business models have been screened, and 5 possible constellations were suggested

In this deliverable, the choice is made for an adaptation of the 'Platform-as-a-Service' business model. The adaptation is that local incubators are not charged directly for use of the platform, but that these costs are covered for by CSR sponsors.

Some critical resources for the business model have already been developed (content developed in the VOICES project) or promised (3 year free hosting and use of W3C DevCampus platform), allowing for a low cost solution.

The business model is described in detail, and a financial analysis is presented. From that analysis we conclude that the mobile training lab can be financially sustainable, and lead to the training of 2.700 African ICT entrepreneurs when it is run as a social business (limited profit, high impact).

SCOPE OF WORK PACKAGE 6: **MOBILE TRAINING LAB**

The aim of this Work Package (WP) is to set up a Mobile Training Lab in Senegal where expertise will be disseminated on mobile technologies that are significant to the context. This will enable local entrepreneurs to launch new services, provide locally relevant content and applications to the country, and benefit from a revenue stream. The technologies in scope for this WP6 include (but are not limited to) voice applications and web technologies that are accessible through a mobile phone. The training will focus not only on the technology aspect, but also on the overall user experience of a service (how useful, usable and engaging it is for the possible users), business models and methodologies to deploy services. This WP6 will ensure the self-sustainability of the lab itself, building on the foundations of sustainable business models laid in WP1.

The global work plan of this WP is based on three training session phases to create a self-sustainable auto-expandable mobile training lab in Senegal. During the first phase, the requirements for the training curriculum will be identified and a first selection and training of entrepreneurs will be organised. This first session will also include training of the trainers of the selected local partner, and the setup of online collaboration tools to enable entrepreneurs to get support after the session, and to create a future community of training labs in the region. During the second phase, a second training session will be organized by the trainers of the local partner with consortium partners as observers. The last training phase of this WP will consist of the release of the training content as free and open-source material, the release of the setup methodology of the lab as well as the business plan, the dissemination of results of the experience to create momentum on this concept, and enable organizations from other countries to become new training labs.

In WP1 a framework is followed that describes three stages of project development: design, pilot, and commercialisation. The framework is depicted in Figure 1. More information on this framework and the methodology surrounding it can be found in Part 1 of this document, or in more depth in Deliverable 1.4. The current status of the mobile training lab is that it is in the pilot stage, moving into commercialisation. The effort of WP6 aims to kick-start the commercialisation phase by delivering the final business plan, but does not enter the commercialisation phase by itself as a project. The scope of the pilots and training lab are local, but the results are scalable, and a path has been cleared to allow commercialisation after the end of this project.

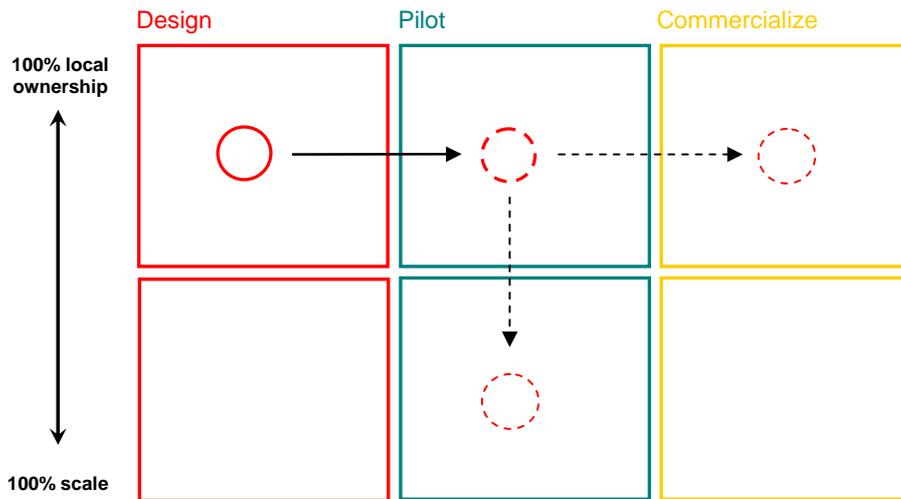


Figure 1: Framework project development (developed in WP1)

In the design phase, the first contours of the business model are developed, as well as the training material. In the pilot phase, the trainings, training material, and business model concept are tested with their respective end-user(s) or stakeholder(s). The next phase for the Mobile training lab (that is beyond the scope of this project) is commercialisation in the local context of Senegal, and piloting in other countries.

SCOPE OF D6.9 BUSINESS PLAN

This document is the final of three iterations to deliver a business plan to successfully set up a sustainable Mobile Training Lab in developing countries (focusing on Senegal, but generalizable to Sub Saharan Africa). In total, three iterations on the business plan are executed, all focusing on different phases and aspects of a business model. These deliverable-iterations do not strictly follow the phases of the design – pilot – commercialisation methodology which is defined in WP1.

In D6.7 a series of business model design trade-offs are brought into consideration that will affect the setup of the business model for the Mobile Training Lab. Also, a comparison between ten case studies of existing labs within and outside Africa is made. These findings are connected to the business elements extracted from D6.1 (Requirements), leading to conclusions on applicability/lessons learnt for the business model of the Mobile Training Lab in Senegal.

In D6.8 two extreme versions of a possible business model for a mobile training lab are created. Between those two extremes, three possible businessmodels have been created, leading to a total of 5, and all are described in detail, using the Business Model Canvas method.

In WP6, two key deliverables were developed in January 2012 and April 2012, i.e., the delivery of the first and second training in Senegal. During this training sessions a number of assumptions of the business model were tested locally and interviews with key stakeholders were done. This resulted in a better understanding of the local context and in more accurate elements of the business models. The first training led to the creation of the 5 possible models, the second training led to the choice for an adapted version of the 'Platform-as-a-service' model.

In this document, a single business model is chosen, based on on-going interactions with local and Western stakeholders and experts. This business model is detailed in a financial business case. The vital resources that the project team was able to secure beforehand (content, platform, hosting) are described. Also key lesson learned on usage, cost and revenue are detailed.

In this document we chose to also incorporate an adaptation of the content already delivered in D6.8, because of the strong connections between D6.8 (description of 5 business models) and D6.9 (choice for one model and further detailing). Another choice to also incorporate the content from D6.8 into deliverable D6.9 was that the text of D6.8 was kept generally the same over time, but the paragraph structure has been reordered for better readability.

Thus, this document contains two chapters, chapter 1 being an adapted new version of D6.8, and chapter 2, being the content that is new for D6.9.

Part I

5 possible business models for the Mobile Training Lab

1. VOICES – MOBILE TRAINING LAB BUSINESS MODELS

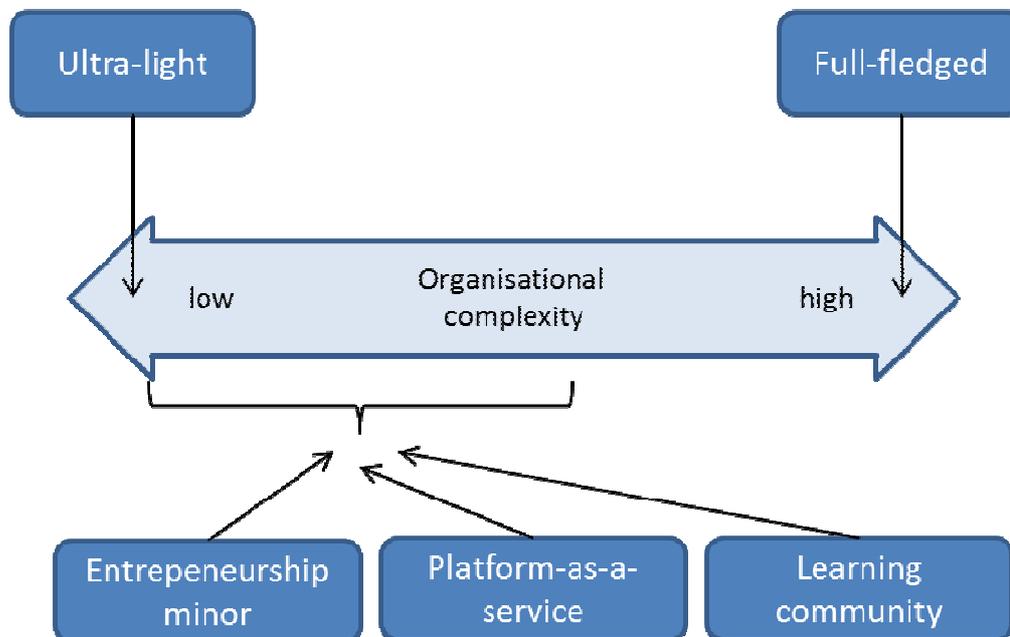
NB: The content in this chapter is an iteration of content already presented in D6.8. We chose to present this content here again because presenting separately would break the interwoven story line, and – practically – because we incorporated structural changes in the text previously presented as D6.8.

In the course of several brainstorm sessions, a variety of business model canvasses have been created for the mobile training lab. The goal of these brainstorm sessions was to create several variations on business models for the mobile training lab in order to find out what could be a sustainable business model. By sustainable we mean in this context economically viable, so that the mobile training lab can sustain and grow beyond the completion of the VOICES project. In this respect, scalability of the underlying business model is important. This demand for scalability however contrasts with the demand for local ownership that is an important success factor as well. This contrast exists because of the tension between the degrees of generalizability and customizability of the mobile training lab, as is also explained in Part 1 of this document. For each of the created business models the tension between scalability and local ownership is mentioned and discussed.

The generated business models are based on knowledge of the concept of the Mobile Training Lab and knowledge of the local situation (based on field visits, and interviews with local stakeholders such as Jokkolabs, CTIC and Ecole Superieure Multimediale de Telecommunications (ESMT)).

The generation of business models for the Mobile Training Lab starts with the creation of a business model spectrum. This spectrum shows the outer boundaries of a range of business models, constructed using the business model building blocks from D6.7 The leanest Mobile Training Lab that could be viable and the most extended Mobile Training Lab that could be viable. The complexity of the business models increases, with the Ultra-Light model being the least complex and the Full-fledged model being the most complex model. At first, the business model's for the Ultra-Light and Full-fledged Mobile Training Lab are generated. There are numerous possible business models within this spectrum. However, for reasons of efficiency, 3 more business models are created within the boundaries of this spectrum, making the total number of models 5. Because we learned that little organisational complexity is tolerated in the local setting, the 3 additional models created are closer to the Ultra-light model than to the Full-fledged model. The 3 additional models are called Entrepreneurship Minor, Platform as a Service, and Learning Community. The figure below depicts the 5 business models.

5 business models



All 5 models are described in the text below and are accompanied by a business model canvas (Osterwalder, 2010). As final part of this analysis, the pros and cons of the various business models are described and more general conclusions are drawn. In the next chapter, a choice for the most viable model will be made.

The bandwidth for the model's is determined by the model's Ultra-Light and Full-fledged Mobile Training Lab. Analysing the defined spectrum, several conclusions can be drawn.

The **Ultra-Light Mobile Training Lab** is characterized by a very lean organizational form. Therefore, agency and organizational costs are low. It is expected that CSR partners delivering content is a critical factor in making the business model successful. The cost to benefit ratio is expected to be positive and exponential. I.e. an increasing number of entrepreneurs incurs little extra costs (less than fee) while benefits increase with the fee. The Ultra-Light model is likely to cause problems in terms of the use of channels through which customers are reached. Local networks remain unused. This is expected to result in involvement-problems because of the invisibility of the training lab and its value network.

The **Full-Fledged Mobile Training Lab** is characterized by an extended organizational form. This leads to increasing agency and organizational costs. In addition, training moves somewhat to the background between other activities. There is a possible mismatch between service providers and entrepreneurs, given the limited financial means of entrepreneurs to buy additional services. In addition service providers are customers as well as partners, which can lead to conflicting interests. Regardless of all pros and cons, the Full-Fledged model seems to

be the only model that is able to support itself, without external donors. Local networks are expected to be used extensively since the community is large and active. The degree of societal embeddedness is expected to be much greater within this model.

The **Entrepreneurship Minor model** is characterized by training on the basis of the Ultra-light model, with a strong link to universities and polytechnics. In close relation to training, the community surrounding the Mobile Training Lab is also part of the value proposition. This model hooks up to the international trend of open education. Initiatives on the free distribution of intellectual content are upcoming, for instance the edX initiative which will offer Harvard and MIT classes online for free. When the Mobile Training Lab can link this content and include it on the online portal, a very valuable online portal is constructed. This model can be combined with a partnership with French universities in order to obtain support and content in French. The added value of such a portal over the original edX portal for example is twofold: a tailor made package can be offered (e.g. only French language edX courses on specific topics of a specific skill level), and the fact that the community in which the content can be discussed and elaborated on is local and can also have a physical presence (which is much appreciated in an informal network such as we found in Senegal). The value network of this model is visible for the local community because of the existence of an active training-community, the use of open content, and online and offline activities. Therefore no involvement-problems are expected.

The **Platform-as-a-Service model** is selling training via the platform and the platform itself. This means that not only training is sold as a service, also an ICT solution is sold as a product. This ICT solution needs marketing and account management. The customization and maintenance of the platform when sold to customers requires certain technical knowledge. The customer base for training services grows with every additional organization using the platform. With every additional platform-customer, new knowledge communities are created. This leads to strong local community building and is expected to create positive local social and economic effects. The operating costs are expected to be higher, while still low in comparison to the full-fledged model which means that the cost to benefit ratio in this model is exponential as well. Scaling to other countries is easier in this model because the 'ground work' can be done by local network partners. The value network of this model is less visible to the local community given the partly online characteristics of the value proposition. This can possibly lead to involvement-problems of local partners or the value network.

The **Training Community model** is basically a model in which training is offered and a student community is built. This model also provides pre-incubation support. This community building is important since training-alumni, students and others active on the platform form a self-sustaining intellectual network that in the medium to long term can provide the content for the platform. Basically by creating this community, local capacity building is done in a socially sustainable way. The value-network is enlarged with every student or start-up being pre-incubated and educated. In order to also create a financially sustainable business model, CSR donors are necessary. Also partnering with incubators can generate income. The operating costs are moderate, which means that cost to benefit ratio in this model is expected to be somewhat exponential. Given the visibility and activity of the community, no stakeholder commitment problems are expected. The scalability of this model is good. However, the creation of a community can take a considerable amount of time and can be considered to form a threshold for implementation in other locations.

Below, the models are worked-out in more detail. Afterwards, a conclusion is drawn on what model would be best suitable for local conditions.

1.2 Business Model Canvas – Ultra-Light Mobile Training Lab

The Ultra-Light Mobile Training Lab is the most stripped down and lean version of the mobile training lab possible. The value proposition in this model is simply to deliver training and to function as an enabler for entrepreneurs wanting to become active on the market for cell phone services and products.

The training is predominately delivered to entrepreneurs and can be business related as well as technology related. The term 'entrepreneurs' is widely interpreted in this business model and can incorporate both starters, entrepreneurial workers and graduated students in either more technical or more business related studies.

The training content is expected to be different for each segment. Therefore various training-programs are needed to target the specific customer segments' needs. These training programs differ in topics and level (basic – advanced). In addition, CSR donors are focused at generating impact. The lab should be possible to generate such impact, as well as capture it. For CSR donors who aim at entrepreneurship, business success stories are the preferred vehicle to express impact. These success stories can be part of their corporate CSR communication strategy.

The basic channel through which the training is provided is the online training platform. This platform enables the customers to use and access the online training on various locations, enabling users to customize their training time and location.

The relationship with customers is primarily originating from word of mouth publicity.

The generated revenues have the form of a fee per module and a CSR sponsorship fee. The fee per module can differ per segment and training level. A CSR sponsorship can have various forms, such as lump-sum or in kind sponsorships.

The main resources of the ultra-light mobile training lab are the online training platform, the training content and the administration of content and entrepreneurs.

The key activities that have to be exploited to provide the core product are the development of training modules, maintaining the online training platform and marketing.

Partners in this model are companies with CSR targets and objectives (named CSR partners) that can invest in and develop training modules. In that sense, companies being involved from a CSR donor perspective can also be seen as customers. The main value proposition for them is CSR success stories as well as marketing opportunities at events (a two-sided business model). Partnering with the organizers of events is crucial to create value for CSR sponsors, since it became clear from the pilots that many multinational ICT related companies are more likely to sponsor ICT-entrepreneurship if their sponsorship is related to an event that attracts media attention.

The main costs expected within this model are related to the online training platform, personnel costs and costs for content. The latter cost can be diminished by partnering with knowledge intensive CSR-partners investing in and developing training modules.

The business model for this model is presented below.

| Key partners | Key activities | Value proposition | Customer relationship | Customer segments |
|---|---|---|--|---|
| <ul style="list-style-type: none"> CSR partners investing in/developing training modules Organizers of events (mobile Monday etc) | <ul style="list-style-type: none"> Dev. Training modules Platform up to date Marketing | <ul style="list-style-type: none"> Online training CSR success stories | <ul style="list-style-type: none"> Word of mouth | <ul style="list-style-type: none"> Entrepreneurs 2-sided: <ul style="list-style-type: none"> Success stories CSR / events |
| | Key resources <ul style="list-style-type: none"> Mobile training platform Training content Administration | | Channels <ul style="list-style-type: none"> Online | |
| Costs | | Revenues | | |
| <ul style="list-style-type: none"> Platform Salaries Content | | <ul style="list-style-type: none"> Module / fee (f.i. \$100-\$500) CSR Sponsorship (f.i. \$ 5.000-\$25.000) | | |

1.2.1 General remarks

The Ultra-Light Mobile Training Lab is characterized by a very lean organizational form. Therefore, agency and organizational costs are low. Given the limited financial means of starting entrepreneurs (as we learned from the pilots), the payments via fees can't be large and therefore ultra-light Mobile Training Lab depends on CSR partnerships and sponsorships for the obtainment of intellectual content. This dependence on external financial support is the central weakness of this model. From the pilots we learned that certain partners provide a lump-sum sponsorship, while others sponsor in kind. The in kind and lump sum sponsorships are both important however, for out of pocket expenses a lump-sum is needed. For the sustainability of the platform, a certain cash flow is inevitable. The cost to benefit ratio is expected to be positive and exponential. I.e. an increasing number of entrepreneurs incurs little extra costs (less than fee) while benefits increase linear.

The scalability of this model is good. To reach a bigger scale one can first expand to other French speaking African countries, although our pilot showed that entering a new territory (with its own informal ecosystem of starting entrepreneurs) also requires significant investment. A possible threshold for the success of this model (that also holds for other model's) is the distribution of services via an online platform in geographical areas with a low penetration rate of internet connectivity. In this model, the mobile training lab is accessed via (high speed) internet. A low penetration rate of internet connectivity could have an effect on both the platform as well as on the customer relationship. Therefore, providing a connection or providing access to the platform on a physical location (e.g. the location of a partner) can be necessary to reach a large enough customer base.

1.3 Business Model Canvas – Full-fledged Mobile Training Lab

The Full-fledged Mobile Training Lab is the most elaborate version of the mobile training lab. The value proposition of this Mobile Training Lab is to supply a physical office location in which offices or workspaces can be rented. In addition a supply of corporate services, a community (market) research, online and offline training, funding opportunities and a prototyping platform are offered to customers/participants. These propositions each serve their own specific subset of customer segments. Within some propositions various degrees of provisions can be distinguished. There can be basic and advanced training, more or less extensive market research, small and large office spaces etc.

This large amount of offerings is offered to a broad customer base. This base consists of students, entrepreneurs and SMEs, universities and polytechnics. The latter two are also customers since the Full-fledged lab can provide lectures on entrepreneurship. These lectures on entrepreneurship fill a gap in the current curricula, which is demanded by government and university boards. Also service providers are customers in the way that the mobile training lab provides them with customers. As with the ultra-light lab, this lab also creates possible CSR success stories. Therefore CSR donors are a customer group as well. This broad array of propositions and related broad array of customers makes it very likely that the Full-fledged lab is generating a broad impact on society.

The different customer groups can be reached via universities, polytechnics and the physical office location. The most suited ways to reach these customer groups via these channels is by making use of an account manager, faculty staff and a host at the physical location. Word of mouth will inevitably take place and will have an impact on (future) customers as well.

The revenues generated by providing these offers can have various forms such as a membership fee (including some prepaid corporate services), rent for office space, post-paid corporate services and/or funding via universities and polytechnics.

The key resources supporting the value proposition are the physical location, the online training platform, the training content and staff.

The main activities needed to provide the offer are the creation of a strong and stable community, the management of this community, account management and the maintenance of both the training modules as well as the online platform.

The key partners in this model are universities and polytechnics for their link to students, service providers, financial institutions and investors for the supply of venture capital (and possible CSR donors when interested).

The main costs within this model are costs related to the physical location, personnel costs for staff and costs for training content.

The business model for this model is presented below.

| Key partners | Key activities | Value proposition | Customer relationships | Customer segments |
|---|---|---|--|--|
| <ul style="list-style-type: none"> Universities Polytechnics Service providers Financial institutions & investors CSR Donors | <ul style="list-style-type: none"> Community creation Community management Account management Maintaining training modules and platform | <ul style="list-style-type: none"> Workspace Community Services Offices (market) research (Online) training Funding opportunities Prototyping platform CSR success stories | <ul style="list-style-type: none"> Account manager Host Faculty staff Word of mouth | <ul style="list-style-type: none"> Students Entrepreneurs SME's University (teaching entrepreneurship) Polytechnics (teaching entrepreneurship) Service providers <p>2-sided:</p> <ul style="list-style-type: none"> Success stories CSR / events |
| | <p>Key resources</p> <ul style="list-style-type: none"> Physical location Training Platform Content Staff | | <p>Channels</p> <ul style="list-style-type: none"> Via universities Via polytechnics Via physical location | |
| | <p>Costs</p> <ul style="list-style-type: none"> Location costs Staff Training | | <p>Revenues</p> <ul style="list-style-type: none"> Membership fee (including some prepaid services) Rent Postpaid services (including training) Funding via universities and polytechnics CSR donors | |

1.3.1. General remarks

An extended organizational form characterizes the Full-Fledged Mobile Training Lab. The complexity increases drastically when compared to the Ultra-Light model. Complexity does not only increase in the internal organization but also for the external organization. Establishing and maintaining such a community is very complex and time-consuming from a governance point of view. As a result, training is expected to be displaced to the background.

There is a large number of customer segments and key partners that need careful management. Agency and monitoring costs will be large in comparison to other models. Besides that, there exists overlap between several partners and overlap between partners and customer segments. These forms of overlap can lead to conflicting interests and possible opportunistic behaviour. Besides increasing costs of monitoring and governance, the revenues are also larger.

The large value proposition leads to a larger addressable market of customers and therefore also to a potentially larger revenue stream. However, regardless of the high benefits, the costs are also larger and the cost to benefit ratio is estimated to be meagre (shown by incubators and labs in a Western context) in comparison to the Ultra-Light model.

The scalability of this model is mediocre given the high costs of starting up at another location. However, the impact on society is expected to be much larger in this model, given the stronger rootedness of this Full-Fledged Mobile Training Lab within local societies.

Comparing the Ultra-Light and Full-Fledged Mobile Training Lab, models more in line with the Ultra-Light Mobile Training Lab are estimated to be more realistic given their lean organizational form and absence of direct competition with local incubators and

entrepreneurial support. Therefore the alternative models will be related to the Ultra-Light model and will show similarities with this extremely lean model. However, there will be similarities with the full-fledged lab. The generated business models are combinations of the ultra-light and full-fledged model. Each model will have a different emphasis.

1.4 Business Model Canvas – Entrepreneurship Minor

An alternative model based on the low-complexity of the Ultra-Light Mobile Training Lab is called the Entrepreneurship Minor. This model is based on the central value proposition of on- and offline training, access to the online platform, an entrepreneurial community, (market) research services and providing lessons/colleges on entrepreneurship on universities and polytechnics.

Within some propositions various degrees of provisions can be distinguished. There can be basic and advanced training, more or less extensive market research, more or less active participation in the community.

The main customers for this proposition are students, universities and polytechnics. The trainings can be either provided to business or technology related studies. These customers are reached via university- and polytechnic-channels (f.i. staff, posters, flyers). The main relationships with customer groups are maintained via faculty staff and word of mouth. Faculty staff can address certain activities and can be seen as an intermediary between students and the mobile training lab.

The revenues coming from this proposition are a membership fee or a fee per module for training, funding via universities and CSR donors. The fees can differ per degree of provision of a certain proposition. For instance more advanced training is expected to be charged with a higher fee than basic training.

The key resources in this model are training, training content and administration.

The activities that need to be performed in order to provide the proposition are the development of training modules, maintaining the platform, creating the training community, community management and account management.

In order to be able to offer the value, several partners are needed such as universities, polytechnics, CSR partners for developing or investing in training modules and additional funding and organizers of events to provide CSR partners with media attention.

Main costs within this model are allocated to staff and training development.

The business model for the entrepreneurship minor model is presented below.

| Key partners | Key activities | Value proposition | Customer relationships | Customer segments |
|--|--|---|--|--|
| <ul style="list-style-type: none"> Universities Polytechnics Donors CSR partners investing in/developing training modules Organizers of events (mobile Monday etc.) | <ul style="list-style-type: none"> Dev. Training modules Platform up to date Community creation Community management Account-management | <ul style="list-style-type: none"> (online) Training Access to online platform Community (market) research Minor entrepreneurship for universities and polytechnics | <ul style="list-style-type: none"> Faculty staff Word of mouth | <ul style="list-style-type: none"> Students University (teaching entrepreneurship) Polytechnics (teaching entrepreneurship) 2-sided: <ul style="list-style-type: none"> Success stories CSR / events |
| | Key resources | | Channels | |
| | <ul style="list-style-type: none"> Training Platform Content Administration Alumni network | | <ul style="list-style-type: none"> Via universities Via polytechnics | |
| Costs | | Revenues | | |
| <ul style="list-style-type: none"> Personnel Training | | <ul style="list-style-type: none"> Membership fee or fee per module Funding via universities CSR donors | | |

1.4.1 General remarks

The Entrepreneurship Minor model is characterized by a strong emphasis on online training and face-to-face education. The main value proposition is training combined with an entrepreneurship minor on universities and polytechnics. The organizational form of this model is lean. The main activities are the deliverance of training and education and the creation and maintenance of the community and platform.

This model embraces the international development of open innovation. Especially initiatives like edX¹, sharing Harvard and MIT content online for free, create the chance to obtain and link high-class intellectual content to the Mobile Training Lab. The connection to a French university is expected to be important given the existence of language barriers.

This model also creates the possibility to use the alumni network and thereby create a value network linked to the training lab. The scalability of this model is good, as it can be applied to other universities and polytechnics. However, language barriers will have to be addressed when expanding this model to other locations. Expanding to other French speaking African countries seems to be a logical first step. This will induce start-up costs, but it is estimated that the revenues of this model will be such that this initial investment is justifiable.

¹ <http://www.edxonline.org/>

1.5 Business Model Canvas – Platform-as-a-Service

The second alternative model is named “Platform-as-a-Service”. This model is based on the central value proposition of offering training on one hand and selling licenses for use of the total training platform on the other.

The customers in this model are the entrepreneurs on one hand, while on the other hand organizations such as Jokkolabs, Coders4Africa and CTIC can be seen as customers for the training platform licenses. The channels through which these services are sold are mainly online, a local server and personal agents. The customer relationship is maintained via word of mouth experience, advertising and a sales agent. The revenues generated by this value proposition are a fee per module, a license and a CSR sponsorship.

Key resources in this model are the VOICES platform, content, administration and the sales agent(s). The key activities performed in this model are the development of training modules, maintaining the training modules and platform, marketing and sales activities. The main partners necessary in this model are CSR partners investing in the development of training modules and thereby delivering training content, and organizers of events to provide CSR partners with media attention. The costs of this model are formed by the platform (maintenance), personnel costs and costs for training content.

The business model for the platform as a service model is presented below.

| Key partners | Key activities | Value proposition | Customer relationship | Customer segments |
|--|--|--|--|--|
| <ul style="list-style-type: none"> CSR partners investing in/developing training modules Organizers of events (mobile Monday etc.) | <ul style="list-style-type: none"> Dev. Training modules Platform up to date Marketing Sales | <ul style="list-style-type: none"> Training Training platform | <ul style="list-style-type: none"> Word of mouth Advertising Agent | <ul style="list-style-type: none"> Entrepreneurs CTIC Jokkolabs 2-sided: <ul style="list-style-type: none"> Success stories CSR / events |
| | Key resources | | Channels | |
| | <ul style="list-style-type: none"> Training Platform Content Administration Agent | | <ul style="list-style-type: none"> Online Local server Personal agent | |
| Costs | | Revenues | | |
| <ul style="list-style-type: none"> Platform maintenance Personnel Content | | Entrepreneur fee per course (\$ 50-250) License fee (to be determined case by case) CSR Sponsorship (\$ 5.000-25.000) | | |

1.5.1 General remarks

The Platform as a Service model is basically selling two services to customers: training via the online platform and the training platform itself. The organizational form of this model is lean. It is expected that the revenues from selling both propositions are not enough for a sustainable business case. Therefore CSR sponsors are expected to be needed in this case as well. Costs are low and stay low, even with increasing amounts of customers. This leads to a

positive and exponential cost/benefit ratio. More technical knowledge is expected to be necessary to be able to sell, customize and maintain the platform as a product.

The scalability of this model is good, as it can be applied to other regions and countries. As in the former model, language barriers will have to be addressed when scaling up this model. This will induce start-up costs, but it is estimated that the revenues of this model will be such that this initial investment is justifiable. Expanding to other French speaking African countries seems to be a logical first step and a way to reduce start-up costs.

1.6 Business Model Canvas – Training Community

The third alternative model is named “Training Community”. The proposed offer for this model is the supply of online training, a community and (market) research services.

The community mainly consists of students, developers, teachers/trainers and alumni linked to the mobile training lab. The training is offered to students. The community is offered to students, universities and polytechnics. The research facilities are offered to students and start-ups. Training can also be given at Universities and polytechnics in the form of entrepreneurship modules. This community enables mentorship for students as well as entrepreneurs and can therefore also be seen as pre-incubation support. Given this pre-incubation proposition, an additional customer segment arises, namely incubators and tech-labs. These incubators and tech-labs are customers for pre-incubated students and entrepreneurs.

These customers are reached via universities and polytechnics and also via relationship management.

The customer relationships are maintained via faculty staff as far as students and start-ups go. For the incubators and tech-labs an agent is more suited to maintain the customer relationship. In addition advertising can create interest and curiosity and draw attention to the community and its participants.

The activities result in revenues from a membership fee and funding via universities. Also CSR donors produce revenues.

The key resources for this model are the training platform including its content, the administration supporting the community and the community itself. The community is a resource that is less tangible and hard to manage and maintain.

The key activities that have to be performed are the development of training modules, maintaining the platform, creating and managing the community and managing customer accounts. Because of the community being hard to maintain and manage, the most important key-activities are creation and management of the community.

The key partners in this model are universities and polytechnics for access to students. Incubators and co-working tech-labs have a key position as partner for spotting start-ups via their entrepreneurial network. In close relation to the incubators and tech-labs, entrepreneurs that have outgrown incubators/pre-incubation phase are key partners for coaching and guidance of start-ups and students in the pre-incubation phase. Donors are a key partner in creating enough revenues to maintain the training and pre-incubation community. CSR partners can deliver training content or can develop training modules. In addition it is key to partner with organizers of events to provide CSR partners with media attention. This makes CSR partners more likely to take part in the Mobile Training Lab.

The main costs in this model are staff and training content and the management of the community.

The business model for the training community model is presented below.

| Key partners | Key activities | Value proposition | Customer relationships | Customer segments |
|---|--|--|---|---|
| <ul style="list-style-type: none"> Universities Polytechnics Incubators Co-working- /tech-labs Entrepreneurs (outgrown incubation) CSR donors CSR partners investing in/developing training modules Organizers of events (mobile Monday etc.) | <ul style="list-style-type: none"> Community creation Community management Dev. Training modules Platform up to date Account-management | <ul style="list-style-type: none"> (Online) training Community (market) research Pre-incubation support | <ul style="list-style-type: none"> Faculty staff Agent Advertising | <ul style="list-style-type: none"> Students Start-ups University (teaching entrepreneurship) Polytechnics (teaching entrepreneurship) Incubators Co-working- /tech-labs <p>2-sided:</p> <ul style="list-style-type: none"> Successories CSR / events |
| | <p>Key resources</p> <ul style="list-style-type: none"> Training Platform Content Administration Community | | <p>Channels</p> <ul style="list-style-type: none"> Via universities Via polytechnics Public relations | |
| Costs | | Revenues | | |
| <ul style="list-style-type: none"> Personnel Training content Community management | | <ul style="list-style-type: none"> Membership fee Funding via universities (CSR) donors | | |

1.6.1 General remarks

The organizational form for this model is lean, keeping costs low. The local ownership is particularly important in this model since the value proposition is mainly based on the local community. There are enough possibilities to locally adjust the proposition to create local connectedness with the supplied products and services. Local community and capacity building is especially strong in this model, given the emphasis on the local community building. This model basically generates a pre-incubation pipeline towards existing initiatives such as incubators and tech-labs. This model is avoiding direct competition with existing incubators and tech-labs, since the community and its activities are complementary to existing initiatives.

The scalability of this model is good, as it can be applied to other regions and countries. As in the former model, language barriers will have to be addressed when scaling up this model. This will induce start-up costs, but it is estimated that the revenues of this model will be such that this initial investment is justifiable. Expanding to other French speaking African countries seems to be a logical first step and a way to reduce start-up costs.

1.7 General conclusions

Based on all partial conclusion it becomes clear that a fully sustainable model without donors is only possible in the full-fledged model. However, in the full-fledged model considerable competition will be experienced from established players on the market. All other model's require the input from donor organizations. The training community model is leaning towards the full-fledged model, only without the physical office location and service provision. The training community model is thereby avoiding direct competition with existing initiatives such as Jokkolabs and CTIC, but merely being complementary to their service provision. The training community model can be seen as a pipeline of pre-incubation towards the actual existing incubators and tech-labs. The service-as-a-platform model can be seen as offering a single service (online learning platform) to the portfolio of an already existing incubator. That makes it the model with the smallest footprint. Whether or not existing incubators are willing to invest in this platform is part of the investigation is a big question for this model.

In the next chapter, a choice for one of these 3 models is made, adaptations are explained and a business plan of this adapted model is further investigated and detailed.

Part II

Business Plan for the Mobile Training Lab

2. VOICES – MOBILE TRAINING LAB BUSINESS PLAN

In this section a choice for a final business plan for the Mobile Training Lab is made, explained and detailed. In this plan we will select the business model that has the best fit with the mobile learning lab and explain how this model could work in the future. In the second section of this chapter we will look into the financial structure of the business model, based on experiences in the field (pilot 1 and 2). The team has made some arrangements for certain crucial resources to be readily available for a quick commercialisation and those provisions are explained here. We conclude the chapter with some recommendations regarding the further roll-out of the business plan.

2.1 The business model for the Mobile Learning Lab

In the previous chapter five different business models were generated. In this section we will select the business models that have the best fit with our goal, based on the experiences with the first training sessions.

2.1.1 The choice

The business model that has the best fit with the Mobile Learning Lab is an adaptation of the **‘platform-as-a-service’** business model. This model is one of the most lean models and focuses on the most efficient way to deliver the training content to entrepreneurs that want to become active on the market for mobile phone services and products. The Platform-as-a-service Mobile Training Lab is characterized by a very lean organizational form, with a virtual organisation supplying the platform and content from the West, and local organisers at existing incubators delivering the physical aspects of the training. Therefore, agency and organizational costs are low.

The adaptation from the model described in chapter 3 is that we changed the revenue model. Given the limited financial means of both the starting entrepreneurs as well as the local incubators (as we learned from the second training session – see Deliverable D6.6 for more details) we concluded that asking a fee from incubators to use the platform would be problematic, both in terms of revenue as well as in terms of administrative burden (record keeping, accountability, transferring relatively small amounts of money for each training). Therefore we decided to have the students pay the fee directly to the incubator. The incubator receives a mix of student fees from enrolled students and CSR donor money from the virtual organisation. The virtual organisation is the one actively attracting CSR donor money, and channelling a significant portion of it to incubators running its platform.

A main reason not to focus on the Entrepreneurship Minor Model is that we learned that the amount of universities currently offering practical entrepreneurship courses in Africa is growing, but still very limited, and therefore we would not be able to reach many students in the first years. We see positive developments in this field, but expect a larger set of (technical) universities to enter the entrepreneurship/incubation field only within a period of 3-5 years. By that time, the platform-as-a-service model would also be an interesting offer to them to increase the quality of their learning content.

The main reason not to focus on the Training Community Model is that this model would be complementary to (or even compete with or distort) activities already performed by local incubators. Therefore, it will be hard to convince local incubators to put too much effort on supporting this model. In the terminology of the model developed in WP1, there would be little 'local ownership' which is vital to the success of such a model.

Benefits of the Platform-as-a-service model

Low cost

One of the most important reasons to choose model is the low costs that are involved in the maintenance of the Mobile Learning Lab. Low costs are important as we found that it is hard to generate enough revenues in this market given the limited financial means of starting entrepreneurs.

Scalability

The second main reason to select this model was the level of scalability. To reach a larger scale it is easy to expand to any of the ~200 incubators in French and English speaking African countries and later even outside of Africa. The pilot showed that physically entering a new territory (with its own informal ecosystem of starting entrepreneurs) requires significant time-investment, and thus using local incubators as a bandwagon could prove a successful market-entry strategy.

Mobility

Somewhat related to scalability, the final reason is that the Mobile Learning Lab needs to be easily operated anywhere in Sub Saharan Africa, without the need to organize and arrange a lot of people and things to move around before it actually can take place. In this model the only requirements are a classroom-like setting with computers with internet access, which are present at all Sub Saharan ICT incubators and university centres.

Possible Thresholds for the Platform-as-a-service model

Internet connectivity

A possible threshold for the success of this model (that also holds for other models) is the distribution of services via an online platform in geographical areas with poor internet connectivity. In the design of the content this has been taken carefully into consideration. The platform and learning course are designed in a very light and standardised way, using HTML5 (which requires no further plugins to be installed). Whenever video content is presented in the course, this is done through embedding YouTube video. Users on low bandwidth connections will automatically receive a video of a scaled down quality as part of standard YouTube policy. Users can themselves select to have the video played back in higher quality (HD) when desired.

The courses are not memory intensive, and do not require any installation (all HTML5) meaning alternative distribution methods (distribution via CD-ROM or USB-stick can also be taken into account when necessary. However, to our knowledge no ICT incubators exist yet without any form of internet connectivity.

Local adoption

As extensively written in WP1, services for the BoP face a challenge between local ownership and scalability. This is also the case for the Mobile Training Lab. The ‘platform-as-a-service model’ has no physical presence on the ground, but aims to use existing local incubators, grassroots organisations and other special interest groups as an entry point into new territories. Still, the trust and commitment of those local incubators needs to be won. In our experience from the two pilots, local incubators see the added value of having a high quality curriculum available, as long as it does not require up-front investment from them. In our business case, we calculated that incubators can earn a part of the CSR donor funding next to generating student fees of up to 125 Euro per student, making this an attractive offer for them to join.

2.1.2 Elaboration of the business model

In this section the “platform-as-a-service” business model will be elaborated by using the business model canvas. Each building block of the canvas will be shortly described.

The owner of the business model is the virtual organization running the platform from a central location (most likely in the West). There are several (mainly not-for-profit) organizations who have a mission in which this task would fit, such as AfriLabs or Worldwide Web Foundation.

| Key partners | Key activities | Value proposition | Customer relationship | Customer segments |
|---|---|---|---|---|
| <ul style="list-style-type: none"> CSR partners investing in/developing training modules Organizers of events (mobile Monday etc) | <ul style="list-style-type: none"> Developing training modules Updating training modules Updating platform Engagement of CSR donors Engagement of incubators Project management | <ul style="list-style-type: none"> Training Course multi-sided: <ul style="list-style-type: none"> Attract entrepreneurs Deliver CSR success stories | <ul style="list-style-type: none"> Long-term relationship (incubator) Long-term relationship (CSR sponsor) Transactional relationship (entrepreneur) Word of mouth after following the course | <ul style="list-style-type: none"> Entrepreneurs multi-sided: <ul style="list-style-type: none"> Local incubator CSR organisations |
| | Key resources <ul style="list-style-type: none"> Moodle platform Training content Program manager Network of virtual trainers Network of incubators | | Channels <ul style="list-style-type: none"> Moodle Incubator / local trainer Alumni Word of Mouth CSR sponsors: account management | |
| Costs | | Revenues | | |
| <ul style="list-style-type: none"> Platform/hosting Salaries Content | | <ul style="list-style-type: none"> CSR sponsorship Student fees (paid directly to incubators) | | |

Customer Segments & Value propositions

There are two customer segments that can be identified.

The first customer segment is the entrepreneurs or student entrepreneurs that enroll in the course. This are mainly entrepreneurs-to-be that want to learn more about entrepreneurship and technology in the telecom and Internet domain. Their main motivation to join this course is to develop themselves. Because of the technical focus, this market segment can be stated as an niche market. This means that there is a clear specific and specialized customer segment and the value proposition, distribution and channels are tailored to the specific requirements of the entrepreneur.

The other customer segment is a multisided market, where the platform acts as a aggregator between local incubator and CSR sponsors. Incubators are organizations that offer programs designed to support the successful development of entrepreneurial companies through an array of business support resources and services, developed and orchestrated by incubator management and offered both in the incubator and through its network of contacts. Incubators vary in the way they deliver their services, in their organizational structure, and in the types of clients they serve. The local incubators can add the Mobile Training Lab to their service portfolio and attract entrepreneurs while simultaneously attracting financial support from CSR sponsors.

On the other hand, the CSR sponsors are organisations dedicated to stimulating (ICT) entrepreneurship, and see the platform as a tool for them to easily reach a large number of hard to reach African (ICT) entrepreneurs, with a standardized, high quality offering. It can also be said that CSR sponsors are seeking success stories that can be part of their corporate CSR communication strategy. They can advertise their company by sharing information about the sponsoring of successful initiatives. Stories about successful entrepreneurs are essential for them, and the online platform offers them easy access to a large set of starting entrepreneurs for a relatively low cost (150 Euro per entrepreneur, as will be explained in the financial business case).

Channels

There are many different moments when (potential) customers of the Mobile Training Lab interact with the organization that offers the value proposition. First the awareness need to be raised about the mobile training lab and the courses that are offered. The main channel for raising awareness is the local incubator that is already embedded in the local ecosystem. The staff of local incubators as well as successful training course alumni can be seen as ambassadors of the online training course. The benefit of offering the course for them is that their service portfolio as incubator grows with high quality content and they can attract and support more entrepreneurs, while at the same time attracting CSR funding.

The channels that are used to communicate with the customers during the course are the Moodle platform, which has chat and forum functionality, skype to connect to the virtual trainers and guest speakers, and face-to-face contact with the local coordinator and local trainers (all organized by the local incubator). The local trainer will answer generic questions and walk them through the modules, while the remote trainer is available on set times to answer more in-depth questions about a topic.

Trainees that followed the course also play an important role in attract new customers. When they find the courses interesting they will tell about them to their peers. In this way they become, just like the staff of the incubator, ambassadors of the Mobile Training Lab and spread the news by word of mouth.

Post-use support is taken care of by the incubator staff. They can offer them help with setting up their company and help them to apply the things they have learned during the course.

Customer relationship

The relationship between the virtual organization and the incubator, that plays a major role in the marketing of the product, has to be a long term and personal relationship, as the incubator will be offering the course several times a year. The CSR donors will be targeted by the virtual organization using a personal engagement approach, where the program manager of the virtual organization acts as an account manager.

The virtual organization does not build individual personal relationships with students/entrepreneurs, while the local incubator does. The local incubator does not built the strong personal relationships with CSR donors the virtual organization does.

Revenues

The revenues for the whole system are twofold, entrepreneur fees and CSR sponsorsips. We found entrepreneurs willing to pay USD 100,- for the course in Senegal, while in Ghana up to USD 200 can be charged. We found CSR sponsors willing to invest figures of around 10.000-15.000 to start-up local incubators. In a later stage, CSR sponsors would be willing to spend around \$200 per 'graduated' entrepreneur (for a 10.000 Euro contribution they expect proof of 50-65 entrepreneurs attending).

As will be explained in the financial business case, the majority of cost are made locally. Therefore, all local entrepreneur fees can be paid directly to the local incubator. The CSR donations will cover both the cost of the virtual organization as well as the part of the cost of the local incubator that is not already covered by entrepreneur fees.

Key activities

The key activities that have to be exploited to provide the core product are the development of training modules, maintaining existing training modules, maintaining the online training platform and engaging both CSR sponsors as well as incubators. Also, project management is an important activity, to keep the organization up and running.

Key resources

The main resources of the virtual organisation are the online training platform, the training content and the project manager engaging with both incubators and CSR donors. It is very important that this project manager has significant network with CSR sponsors as well as with local incubators, as much depends on personal connections.

Within the VOICES project, interactive content on both technical as well as business aspects has already been created, and is now freely available. See D6.4 for an detailed overview of the content.

Within the VOICES consortium, W3C has graciously offered to incorporate this content into its Moodle e-learning platform “DevCampus”, and host this content for free for at least 3 years. All content has been added to the DevCampus platform.

Partners

Partners in this model are companies with CSR targets and objectives(named CSR partners) that can invest in and develop training modules. In that sense, companies being involved from a CSR donor perspective can also be seen as customers (making this a multi-sided business model). The main value proposition for them are CSR success stories as well as marketing opportunities at events. Keeping in close connection with partners that organise events such as mobile Mondays is important, because we have learned that sponsors are more willing to sponsor entrepreneurship course around such a media-rich event than without, because it gives them better visibility for their CSR actions.

Cost

The main cost are incurred at the local level, at the incubator. The cost for the virtual organization are mainly staff salary, platform and content. As a large part of the content has already been developed within the VOICES project, and the platform has been made freely available by W3C, the cost for the virtual organization remain relatively low.

The platform and content cost are fixed cost, meaning that they stay roughly the same no matter how many students use the course. This means the model is very scalable (cost per entrepreneur lowers significantly as more entrepreneurs join).

2.1.3 Evaluation of the business model

The above businessmodel has been drafted based on the lessons learned from the 2 pilot iterations. The first pilot tested the concept of a mobile training lab in general, with heavy involvement from the Western stakeholders in organizing the course. For the second iteration, the project team experimented with offering very limited local support, having the local incubator crew organise the physical aspects of the course, while the content was delivered from the Moodle platform. Please see D6.5 and D6.6 for a detailed description of the 2 pilots and the outcomes.

2.2 Financial business case

The following chapter describes a financial business case that has been set up in order to explore if and under what conditions such a business model would be financially sustainable. In order to do so, many number have been estimated based on experience gathered during the two field trials, overall sector knowledge and interviews with experts and practitioners.

This business case shows a single possible scenario, off course the actual use and uptake of the service will depend on many variables that are currently still unforeseen.

As all major investments (content and platform) have already been secured (content created within the VOICES project, platform offered for free by W3C) no significant investments are made. Revenues and costs are very much in line year-per-year. That means that a simple

Profit and Loss statement is sufficient to analyze the viability of the case, and we do not need to go into the details of depreciation and amortization. For the same reason we excluded calculations about tax, interest and inflation. Finally, we did not calculate a net present value worth of the business case, again for the same reasons.

In the following chapter print-screens from excel will be presented. Blue cells are cells where input is entered manually, grey cells are cells that only calculate based on input from other cells.

2.2.1 Customers

| Customers | | | | | | |
|---|------|------|------|------|------|-------|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| # Incubators/universities offering the course | 1 | 4 | 8 | 12 | 20 | 32 |
| market share | 0,5% | 1,9% | 3,5% | 5,0% | 8,8% | 14,4% |
| total market incubators+universities | 184 | 206 | 230 | 238 | 228 | 222 |
| incubators | 180 | 198 | 218 | 218 | 196 | 176 |
| university programs | 4 | 8 | 12 | 20 | 32 | 46 |
| # Courses | 1 | 5 | 12 | 21 | 36 | 60 |
| # Trainees per course | 20 | 20 | 20 | 20 | 20 | 20 |
| # CSR Sponsors | 1 | 3 | 6 | 10 | 14 | 18 |
| Total # of Trainees | 20 | 100 | 240 | 420 | 720 | 1.200 |
| ratio CSR sponsors per course | 1,0 | 0,6 | 0,5 | 0,5 | 0,4 | 0,3 |
| ratio investment CSR sponsor per student | 500 | 300 | 250 | 238 | 194 | 150 |

The total market for English or French speaking ICT incubators on the African continent is estimated by the VOICES team at 180 in 2013. No reliable market research figures exist, so we based our estimation on the following more informal sources:

- a crowd sourced map by AfriHubs (<https://africahubs.crowdmap.com/>)
- the African Incubator Network (<http://www.idisc.net/en/Region.1.html>)
- discussions with local experts. For instance we found 5 local incubators to be active in Senegal (ESMT, Jokkolabs, CTIC Dakar, UCAD, Jjiguene Tech Hub) , while only 1 or 2 are present on the above maps. We assumed the above maps underestimate.
- Blog postings such as on Balancing Act Africa (<http://www.balancingact-africa.com/>)

Currently, setting up incubators is quite a popular activity. We expect the market to grow for a couple of years, but then consolidate.

We expect that universities, which currently hardly have incubation facilities, will step up to this field and gain momentum within 3-5 years, effectively replacing part of the loss of the consolidation in private incubators.

We estimate it is possible to connect 4 more incubators next year, with that figure growing steadily. Comparing these estimations to the total market we calculate the business model to gain a maximum of 15% market share, which is not unrealistic given the lack of training material and the free nature of the content for incubators. In an internal concept note, Worldwide Web Foundation calculated a similar figure.

From the pilot we learned that an incubator can maximally do 3 courses a year. We modelled incubators to have 1 course in the first year in which they join the program, 2 courses per year in year 2 and 3, and 3 courses a year onwards. This leads to the total number of courses reaching 60 per year in 2018 while 32 incubators have joined the program.

From the pilots we also learned that an average of 20 students per course is realistic. In the first pilot, the course had an attendance of 22 students, in the second of 11, and in a 3rd pilot carried out by WF, 20 students enrolled. The low turn-out in the 2nd pilot is explained by a series of factors (including complexities of organising such type of training for groups unfamiliar with the approach, as well as the need to identify the right balance between central and local tasks), for more information see D6.6.

This leads to a maximum number of entrepreneurs to be trained per year in 2018 of 1200.

We expect to start with 1 CSR sponsor per course, as we learned that sponsors prefer to sponsor around specific events (such as Mobile Monday). We learned that sponsors are willing to spend roughly 10.000 EURO on a sponsorship contract, but expect increasing returns (number of students trained for that amount). We learned that eventually CSR sponsors are willing to spend EURO 150 on training a single entrepreneur. Having filled in all the data, we reverse engineered the amount of CSR sponsors required to have a financially sustainable business case. A maximum amount of CSR sponsors of 18 is required. At that moment in time, such a sponsor would pay 150 EURO per student, and be able to sponsor 3 classes of 20 entrepreneurs with a single sponsorship fee.

We consider it viable to find 18 sponsorships (or any equivalent number worth 180.000 EURO) not unrealistic, given the large amount of corporations that currently have some form of CSR program aimed at strengthening ICT entrepreneurship in Africa (Google, Microsoft, Oracle, SAP, Vodafone, Orange, etc.).

2.2.2 Revenues

We modelled the two revenue models as follows.

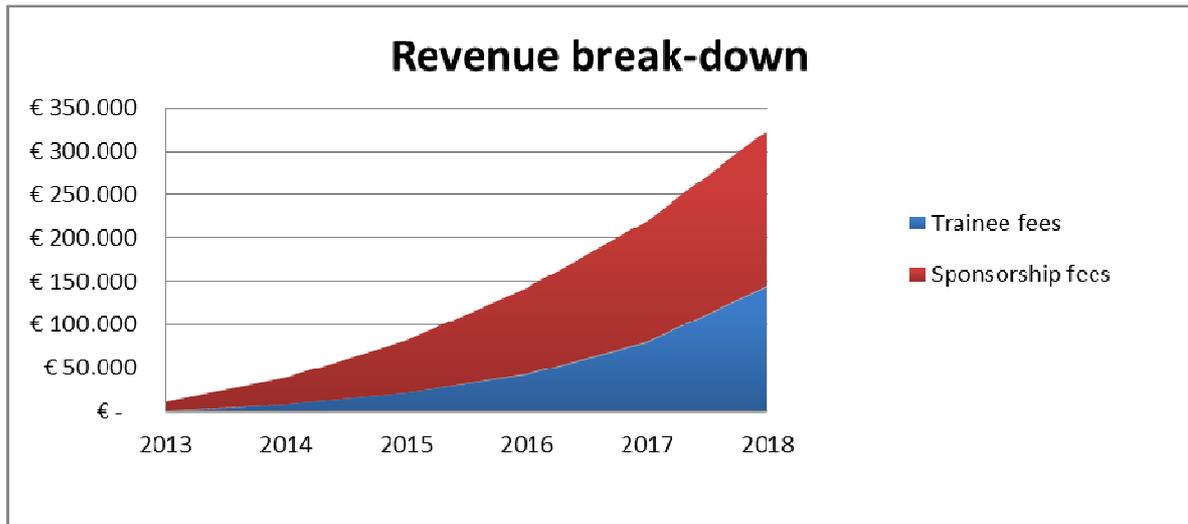
| Fee structure | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------------------------------|----------|----------|----------|----------|----------|----------|
| Fee per trainee | € 80 | € 85 | € 90 | € 100 | € 110 | € 120 |
| Sponsorship fee CSR sponsors | € 10.000 | € 10.000 | € 10.000 | € 10.000 | € 10.000 | € 10.000 |

As mentioned before, we expect CSR sponsorship fees to remain stable, but demanding a greater success rate for a similar amount. For student fees, we learned from the pilots that there was no problem selling the course for 100 USD (EURO 80) in Senegal. Experience from Worldwide Web Foundation in for instance Ghana showed that entrepreneurs are willing to spend up to USD200 for such a course. We decided to gradually increase the fees per trainee. This is because of three reasons:

- The virtual organization will focus its attention on offering the course in countries where entrepreneurs have some money to spend, to cross-subsidize entering very poor countries.
- As the course gains track-record, entrepreneurs will be more willing to pay.

- Lowering the ration CSR vs. customer revenues is crucial in developing a sustainable business model for the training center. We estimate a share of roughly 50%-50% is feasible in the future. Please note that also in a developed world context, most incubators / training labs operate on some form of subsidy (see chapter 2).

The following graph shows the development of revenues, and of the revenue mix. Note that as the program gains scale, the ratio of CSR revenue vs. trainee revenue becomes more favorable towards local revenues.



2.2.3 Operational Costs

The operational cost elements of the business case are described below.

Operational Expenditures

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------------------|----------|----------|----------|-----------|-----------|-----------|
| Operational costs overview | € 15.983 | € 39.655 | € 73.348 | € 119.009 | € 187.594 | € 295.790 |
| Personnel cost | € 14.480 | € 35.800 | € 66.080 | € 105.640 | € 168.240 | € 265.400 |
| local coordinator | € 1.200 | € 6.000 | € 14.400 | € 25.200 | € 43.200 | € 72.000 |
| local trainer | € 1.600 | € 8.000 | € 19.200 | € 33.600 | € 57.600 | € 96.000 |
| virtual coordinator | € 1.280 | € 4.800 | € 7.680 | € 13.440 | € 23.040 | € 38.400 |
| virtual trainer | € 400 | € 2.000 | € 4.800 | € 8.400 | € 14.400 | € 24.000 |
| Project management | € 10.000 | € 15.000 | € 20.000 | € 25.000 | € 30.000 | € 35.000 |
| local facilities | € 50 | € 250 | € 600 | € 1.050 | € 1.800 | € 3.000 |
| Hosting | € - | € - | € - | € 1.500 | € 500 | € 500 |
| unforeseen 10% | € 1.453 | € 3.605 | € 6.668 | € 10.819 | € 17.054 | € 26.890 |
| | | | | | | |
| Total cost per training | € 15.983 | € 7.931 | € 6.112 | € 5.667 | € 5.211 | € 4.930 |
| | | | | | | |
| Personnel Cost per course | € 4.480 | € 4.160 | € 3.840 | € 3.840 | € 3.840 | € 3.840 |
| local coordinator | € 1.200 | € 1.200 | € 1.200 | € 1.200 | € 1.200 | € 1.200 |
| local trainer | € 1.600 | € 1.600 | € 1.600 | € 1.600 | € 1.600 | € 1.600 |
| virtual coordinator | € 1.280 | € 960 | € 640 | € 640 | € 640 | € 640 |
| Virtual trainer | € 400 | € 400 | € 400 | € 400 | € 400 | € 400 |
| | | | | | | |
| Personnel Hours per course | 144 | 140 | 136 | 136 | 136 | 136 |
| local coordinator | 40 | 40 | 40 | 40 | 40 | 40 |
| local trainer | 80 | 80 | 80 | 80 | 80 | 80 |
| virtual coordinator | 16 | 12 | 8 | 8 | 8 | 8 |
| Virtual trainer | 8 | 8 | 8 | 8 | 8 | 8 |
| | | | | | | |
| Personnel Tariffs per hour | | | | | | |
| local coordinator | € 30 | € 30 | € 30 | € 30 | € 30 | € 30 |
| local trainer | € 20 | € 20 | € 20 | € 20 | € 20 | € 20 |
| virtual coordinator | € 80 | € 80 | € 80 | € 80 | € 80 | € 80 |
| Virtual trainer | € 50 | € 50 | € 50 | € 50 | € 50 | € 50 |
| | | | | | | |
| Local facilities | | | | | | |
| cost per facility per course | € 50 | € 50 | € 50 | € 50 | € 50 | € 50 |
| | | | | | | |
| Other costs | | | | | | |
| Hosting | € - | € - | € - | € 1.500 | € 500 | € 500 |
| marketing: engagement | € - | € - | € - | € - | € - | € - |
| Project management | € 10.000 | € 15.000 | € 20.000 | € 25.000 | € 30.000 | € 35.000 |
| unforeseen 10% | € 1.453 | € 3.605 | € 6.668 | € 10.819 | € 17.054 | € 26.890 |

Let's first investigate the blue input fields that are the basis to all the other calculations.

Hourly tariffs have been discussed with the current stakeholders (W3C and ESMT). Hours spent per course is based on the current insights from the two pilots, with some efficiency gains at the side of the virtual organisation as more and more courses start being delivered.

We found many Western business people willing to give pro-bono virtual training and coaching via Skype, so we incorporated a limited amount of hours of actual paid virtual training.

Local facilities (classroom, computers, whiteboard, beamer) are already present at the incubators or universities, so we only included a marginal amount for out-of-pocket cost.

Hosting is done for free by W3C for at least the first 3 years, after that we included a small hosting fee. We calculated no cost for engagement of CSR sponsors as this is part of the task

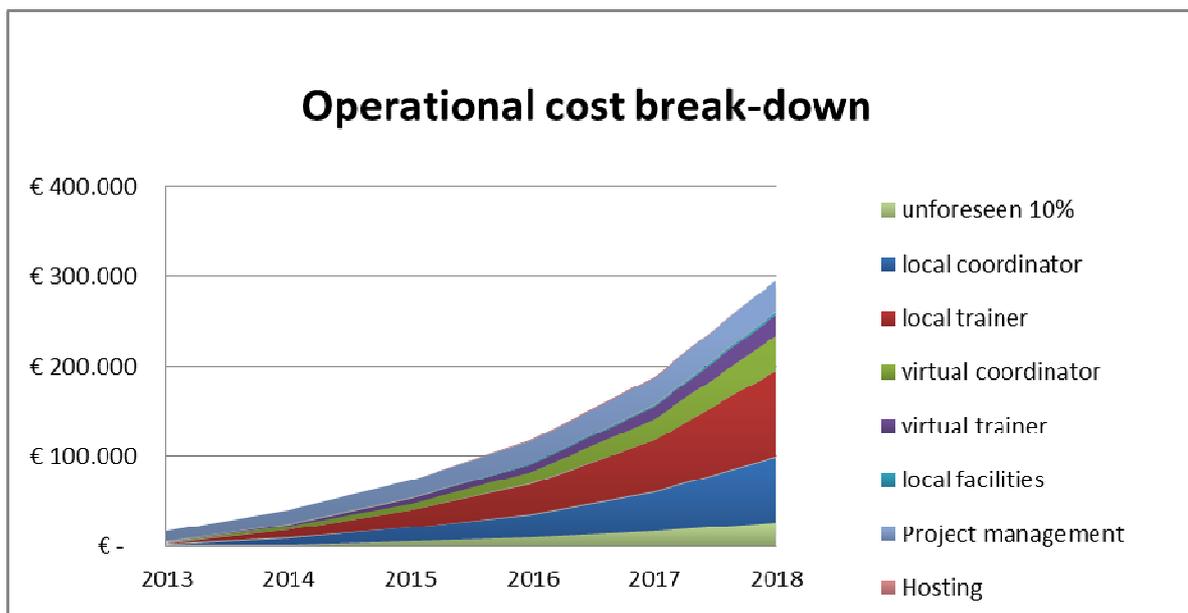
of the program manager, who's salary increases from 10.000 to 35.000 a year. We consider this to be a part-time job.

A standard 10% of unforeseen costs has been added.

Now lets explore some of the figures from the grey cells.

An interesting part of the overview is the total cost per training. It can clearly be seen that scale effects are starting to kick-in, and the average cost per training drops to around EURO 5.000.

Another interesting part is the percentage of local spending. From potential CSR sponsors we learned that they mostly want to sponsor local people and organisations, and not have too much money being spent in the West. In our model, in 2018 61% of the cost are spent locally, and 39% in the virtual organisation. We considered the huge difference in hourly tariffs, and also made a comparison of time spent by local vs. virtual staff, and came to 75% of hours spent locally. However, it takes some time to grow to that situation, with especially project management being a large post in the early years. The graph below gives an overview of the development of the cost structure over time.



Please note that the operational costs are very closely related to the amount of courses delivered. This is because each course requires still a lot of human intervention (both locally as from the virtual organization). A true economy of scale that is common in ICT-business cases, where the cost stabilize while users continues to grow is therefore not reached, making this model less profitable (but not unviable).

2.2.4 Capital expenditure (investment)

The investment are presented below.

| Capital Expenditure | | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|----------------------------|---|-------|-------|-------|--------|--------|--------|
| Development content | € | - | - | - | 15.000 | 15.000 | 15.000 |
| Development platform | € | - | - | - | - | - | - |
| Update content | € | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 |
| Update platform | € | - | - | - | - | - | - |

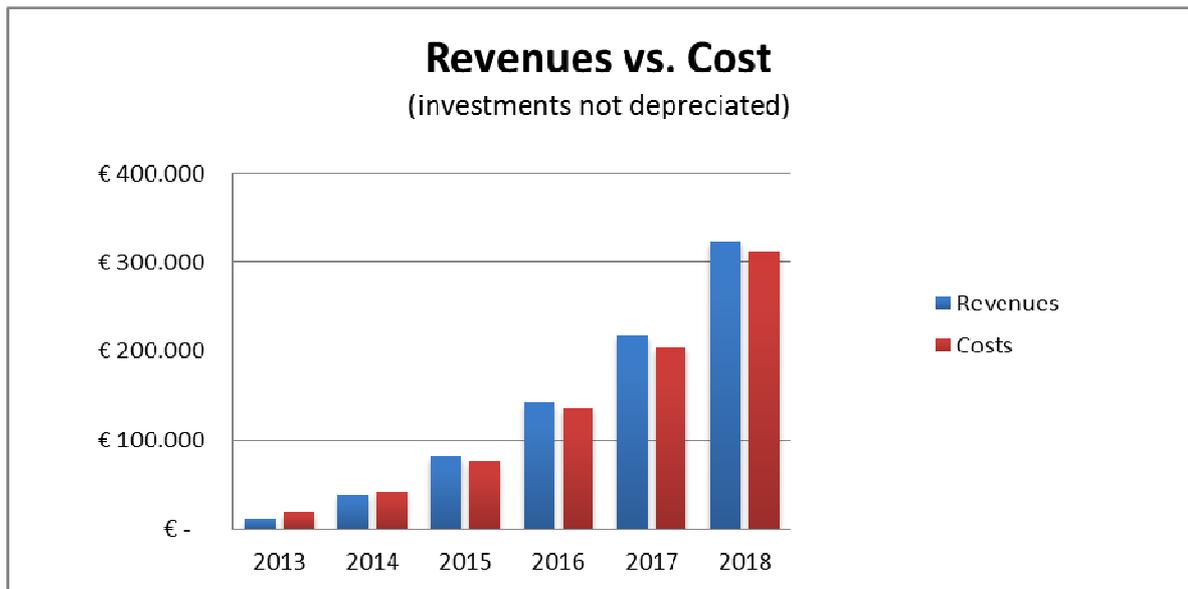
We believe the work done in VOICES has delivered sufficient training material to last for 3 years without any investment in new content. However, some of the existing content will need to be updated. We calculated a minor budget for that (including translation). From 2016, new content will need to be developed, estimated at 15.000 EURO per year including translation. We believe many organisations will be willing to contribute on a voluntary basis to deliver training content (with their logo's prominently visible), but the coding of the content from e.g. MS PowerPoint to HTML5 requires significant skill and time that will need to be contracted.

We calculated no cost for updating the platform, as this is a routine function performed by W3C. In case W3C stops offering the platform for free, open source alternatives exist that can be acquired for free (but of course the DevCampus environment offers great benefit and visibility to the courses).

2.2.4 Profit and Loss statement

The table and graph below compare revenues and costs, from where profit and margin can be determined for the business case.

| Profit & Loss statement | | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|------------------------------------|---|--------|--------|--------|---------|---------|---------|
| Revenues | € | 11.600 | 38.500 | 81.600 | 142.000 | 219.200 | 324.000 |
| Costs | € | 17.983 | 41.655 | 75.348 | 136.009 | 204.594 | 312.790 |
| OPEX | € | 15.983 | 39.655 | 73.348 | 119.009 | 187.594 | 295.790 |
| CAPEX | € | 2.000 | 2.000 | 2.000 | 17.000 | 17.000 | 17.000 |
| Profit/Loss | € | 6.383 | 3.155 | 6.252 | 5.991 | 14.606 | 11.210 |
| margin | | -55% | -8% | 8% | 4% | 7% | 3% |



As can be observed, with all the above figures entered into the business case model, revenues and costs are pretty much in balance, leading to a business case that has a limited profitability. We consider this endeavour to be more of a social business than a pure for-profit business, and within those specifications this case looks promising. A minor issue is the loss in year 1 and year 2, that will need to be absorbed. We expect either the virtual organisation owner to absorb this loss, or that a CSR donor would be willing to invest a little more to cover the first year of exploitation. Another issue is the lack of a true economy of scale, so keeping organisational cost to an absolute minimum are essential in keeping profit margins favorable.

2.2.5 Conclusion

Based on this financial analysis, we believe that with the investment made by the VOICES project into content development, a sustainable business case is possible to set up a business following the 'platform-as-a-service' business model.

This business will classify as a not-for-profit or a social business, with limited profitability, but a large social impact. Over the course of this business case, the organization will have trained 2.700 African ICT entrepreneurs that are ready to create value for the African continent.

2.2.6 Steps forward

The most important step forward for now is to organize one-on-one conversations with potentially interested parties. Also, a round table could be organized getting relevant stakeholders together. We see two main obstacles that will need to be tackled:

- At this moment, no person is dedicated to business development after the life of the project, so this will need to be organized first.
- We learned that there is ongoing competition between local incubators, making it hard to create a consortium that will associate all these partners to jointly set up the virtual organization.

Part III

Literature

Osterwalder, A., Pigneur, Y., Smith, A., & 470 practitioners from 45 countries. (2009). *Business Model Generation*. Self published.