VOIce-based Community-cEntric mobile Services for social development

Grant Agreement Number 269954

Deliverable No D6.1
Mobile Training Lab Requirements

September 2011

SEVENTH FRAMEWORK PROGRAMME
THEME ICT-2009.9.1 – International cooperation

PROJECT DELIVERABLE REPORT

Project	
Grant Agreement number	*2699542*
Project acronym:	*VOICES*
Project title:	*VOIce-based Community-cEntric mobile Services for social development*
Funding Scheme:	*Collaborative Project*
Date of latest version of Annex I against which the assessment will be made:	*18 February 2011*
Document	
Deliverable number:	D6.1
Deliverable title	Mobile Training Lab requirements
Contractual Date of Delivery:	September 2011
Actual Date of Delivery:	30 September 2011
Editor (s):	Franco Papeschi (Web Foundation)
Author (s):	Franco Papeschi, Nicolas Chevrollier, Filipe Pinto, Carole Salis, Hans Hakkermans.
Reviewer (s):	
Work package no.:	WP6
Work package title:	Mobile Training Lab
Work package leader:	Web Foundation
Work package participants:	PT Innovação, VUA, CRS4.
Distribution:	PU
Version/Revision:	1.1
Draft/Final:	Final
Total number of pages (including cover):	95
Keywords:	Mobile, ICT, Senegal, Sub-Saharan Africa, Training, Development, Voice-based technology, business, Entrepreneurship, learning, eLearning.

CHANGE LOG

Reason for change	Issue	Revision	Date
		1.0	15th September 2011
Feedback from quality assurance reviewers		1.1	27th September 2011

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

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EXECUTIVE SUMMARY

The document D 6.1 Requirements highlights the results of the VOICES Consortium's WP6 activities to understand the current landscape of the Senegalese mobile and web industries, as well as to discover what - according to the industry - is required for a mobile training lab. This will act as a basis for creating a mobile training lab.

We have found that – from interviews, workshops and observations on the territory – the training activities will need to:

- Bring an hands-on approach, where most higher education still has a theoretical focus;
- Do not consider it as a simple technical training, but work to facilitate the creation of working mobile services and start-ups;
- Provide tools and expertise to make sure the projects coming out of the lab have a high quality standard; this can be done by including User Experience and process-related training in the course;
- Mix students, professionals, unemployed or underemployed as participants of the training courses;
- Work to include the small but active group of people passionate of mobile and web development;
- Deepen and widen the face-to-face training activities with self-training processes and tools, as this can extend the impact of the lab;
- Work with third parties active in Senegal to facilitate the transition from 'students project' to 'start-up', with special focus on 'access to market' and 'access to capital';
- Have a platform-agnostic approach, which will help participants to benefit from the most open and beneficial platforms for their services.

Also, the Mobile Training Lab should work to extend the activities planned as part of this project in order to become a full-scale Mobile Entrepreneurship Lab, in order to maximise its impact.

In the document, we identify the actions, processes and tools that are needed to put together the main blocks ('components') of the lab; these have been classified and identified in a review of the activities undertaken by incubation and innovation labs in Africa, and include:

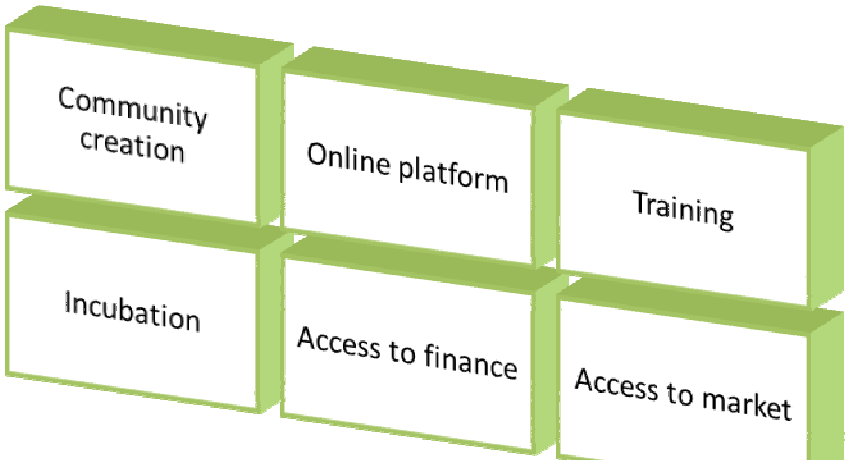


Figure 1 - components of a full-scale mobile entrepreneurship lab

- Activities for community creation: effective to raise awareness, participation and peer to peer learning;

- Training activities: effective for capacity building and conglomeration of start-ups;
- Set-up of an on-line platform for knowledge sharing and self-training: effective for extending outreach, and as a reference point for remote community members;
- Incubation activities: effective to help services an start-ups grow and consolidate;
- Access to finance initiatives: effective to help the start-ups have a sustainable growth plan;
- Access to market initiatives: effective for publicising the products and services, as well as liaising with gatekeepers in some markets (e.g. content aggregators).

As it will be described throughout the course of the document, we have considered appropriate to give priority to two of them:

- Training;
- Creation of a self-training and community platform,

in order to increase the base of knowledgeable and passionate people in the industry, and therefore have an influence on the number and success rate of start-ups.

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

The aim of this Working Package (WP) is to setup a Mobile Training Lab in Senegal, to disseminate expertise on mobile technologies that are significant to the context. These will enable local entrepreneurs to launch new services, to provide locally relevant content and applications to the country and give them a stream of revenues. The technologies in scope for this WP include (but are not limited to) voice applications and web technologies that are accessible through a mobile. 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. Much of the research coming from the Working Package 1, on how to build a sustainable business, will act as a basis for the practical activities on the field. This WP will also ensure the self-sustainability of the lab itself.

The global work plan of this WP is based on 3 phases to create a self-sustainable auto-expandable mobile training lab in Senegal. During a first phase, the WP will identify the requirement in terms of training curriculum, and will organize a first selection of entrepreneurs and train them. 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. Then, a second training session will be organized by the trainers of the local partner and with consortium partners as observers. The last 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, and the dissemination of the results of the experience to create a momentum on this concept, and enable other organizations from other countries to become new training labs.

SCOPE OF **D6.1 REQUIREMENTS**

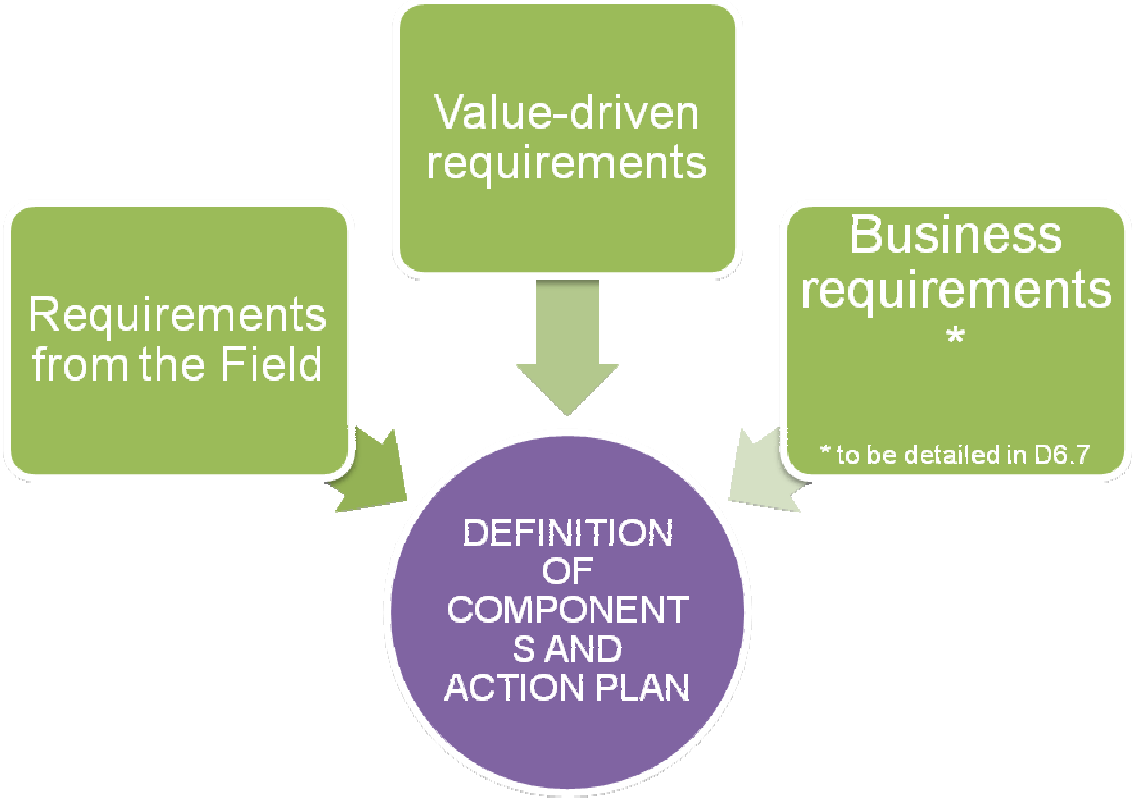
This document identifies the requirements to be satisfied to create a successful Mobile Training Lab, as part of the VOICES project.

Part 1 of the document will highlight the requirements identified: the document will start with a summary of the findings of the research phase, which can be considered as the 'requirements from the field'; we will then explore what are the requirements that the vision for a Mobile Training Lab would need.

The combination of such sets of requirements will give us a good idea of what are the components that need to be put in place in this project, and how this should be rolled out. So, **part 2** of the document will take in deep consideration the components of the lab.

We have then highlighted in **part 3** some of the aspects that would make the lab work: identity and promotion, assessment of the lab activities, a first analysis of the sustainability aspects, and the action plan for the rest of the project.

Please note that this document only touches briefly on a third set of requirements, which we could call 'business requirements' for the sustainability of the training lab itself. An extensive analysis of these business requirements can only be developed after the requirements, goals and activities of the lab are clear.. A complete description of the business requirements will be included – as foreseen – in Deliverable D6.7, due at M12 of the project.



Where do the requirements come from?

In order to identify these requirements, as well as the action plan, the team has completed - in the first 6 months of 2011 – a series of tasks to gather information from the field, in Senegal

and in other African countries where Mobile Training Labs and Incubators have been successfully launched. The activities done include:

- A review of the state of the art on the domain through expert interviews with similar initiatives: mLab East Africa in Kenya, Mobile Web Ghana in Ghana, Active Spaces in Cameroon, CTIC Dakar and JokkoLabs in Senegal. Most of these initiatives are successful in business incubation, and for some of them in ICT, but only two of them (in Kenya and Ghana) are focusing on mobile technologies expertise transfer;
- A series of interviews, workshops and observations in Senegal (Dakar, Thies, St Louis) with experts and stakeholders. These have been useful to understand what is the current landscape, what would be needed, how this could be achieved.

The researches done for Deliverable D1.2 have also been useful to have a theoretical State of the Art, and integrate the research on the field with a rigorous framework.

In addition to this, each of the members of the consortium participating in the Working Package 6 has extensive experience on mobile services for the Bottom of the Pyramid (BoP), training and education tools and practices, which has allowed the team to identify some of the requirements that were undefined from primary and secondary research.

Part 1
IDENTIFICATION OF REQUIREMENTS

REQUIREMENTS FROM THE FIELD

Members of the consortium working on WP6 have spent considerable time in Senegal in the first 9 months of the project, identifying the current landscape and the situation of the mobile and ICT industries. Interviews, workshops and observations have helped us identify some key aspects that need to be taken in consideration when planning and implementing the Mobile Training Lab. For a review of the notes taken during the meetings, please see Appendix I – Interviews with local experts & stakeholders and Appendix II – report of activities and community involvement.

We highlight below the main findings of our researches, interviews and observations on the field

Mobile training: only for techies. Program not complete

From our observation of the educational landscape, some Universities and colleges are putting together their technical programs focused on some mobile technologies. The program created – however – is not complete, as it does not cover all the newly relevant technologies (e.g. evolution of web-based voice services), as well as the integration between these and a more entrepreneurial perspective: there is no training – from what we have seen – dedicated to business innovation, entrepreneurship and user experience for mobile services. While University-level business courses are common, there is no special focus on the skills, knowledge and practices needed to create new mobile-based businesses, from starting up to the consolidation as an SME. During our interviews to people who have lived abroad and moved (back) to Senegal, we have repeatedly heard the need to raise awareness and teach these two components, in order for the start-ups to create services that are truly engaging and sustainable.

More in details, ESMT has Java 2 Micro Edition (J2ME)[1] training in their curriculum. Also, there are short courses and small projects that are happening (e.g. at Université Cheikh Anta Diop - UCAD), involving mobile technologies.

In June 2011, W3C Senegal has organised a mobile web master class (2 days) with François Daoust (W3C) on Mobile Web.

Google has started their GDays in Dakar, focusing – among the other things – in showcasing native applications for Android OS.

Other training related to mobile technologies has been organised with regularity by a group called Mobile Senegal[2], with specific focus on SMS, Java, Mobile Web technologies.

Higher education not facilitating autonomous project creation

Most of the feedback given us on the effectiveness of higher education programs pointed out a focus on theoretical aspects, with consequent lack of hands-on experience on projects,

[1] http://en.wikipedia.org/wiki/Java_Platform,_Micro_Edition

[2] http://mobilesenegal.com/

which then leads to a difficulty for graduates to start working independently on their own project – that could become a start-up.

Some counter-example initiatives are emerging, inside and outside Universities, with bootcamps and project assignments that are part of the courses' duties. The example - mentioned above - of Mobile Senegal[3] is leading the way towards a more project-based learning.

Target audience: mixing students, graduates and professionals

One of the key issues to define is to clarify who are the possible participants to the training sessions. We have seen in the labs in Kenya and Ghana that university students tend to be attracted by this type of initiatives: students can rarely find a job at the beginning of their professional career, so they may be allured by the possibility to start in this way. However, they are not necessarily the ones that can make the most of the opportunity (considering what we have discovered regarding higer education not facilitating autonomous project creation), especially for what concerns the post-training, and their potential to put together a start-up.

It is a key element for the training to attract people who have the potential to generate ideas and to transform them into a company: from the information that has been shared with us, it's very difficult that students will have a 'project mindset'; for this reason, it is less likely that their first efforts to start a new venture will succeed. This has also been observed by TNO and the Web Foundation during a workshop in Dakar with 100 University students at the final year, with technology and business background: it was very difficult for them to propose the correct type of project that could be taken forward by a small company starting-up. On the contrary, most projects proposed were policy interventions, big-scale infrastructure deployment or notes to redefine administrative practices. We may need to focus on this aspect during the training.

Some of the interviewed people suggested focusing at least partially on people who already have some experience in the professional world, and may just not be sure on how to proceed to create their own start-up: this additional target audience has already acquired relevant knowledge on many practical aspects of projects, technologies and businesses, so the training may help them to fill in some smaller knowledge and expertise gap, thus increasing the chance of success.

Face-to-face training need to be integrated to maximise outcome

In the discussions we had with other active labs in Africa, we have received feedback that their face-to-face (one-to-many) classes need to be integrated with other activities in order to:

- Make sure students have time and possibility to discuss, debate and integrate the knowledge they are acquiring during the training, with trainers and among themselves;
- Help face-to-face training students to keep engaged in the training even if they miss some of the classes, due to unavoidable circumstances;
- Expand the outreach of the training to people who could not participate, due to factors such as: need to keep/find a job, physical distance, and unsuitable schedule.

One of the newest and most active labs we have interviewed (mLab East Africa) is therefore working on 2 series of initiatives, in order to make sure that the training is as effective as

[3] http://mobilesenegal.com/

possible. On one side, they are creating post-training reviews and discussion groups (face-to-face, online). On the other side they are working towards the creation of an online platform for knowledge sharing and self-training.

Ecosystem: fragmented but scaling up

The ecosystem has a variety of small actors that are covering a wide spectrum of activities. We have seen that this fragmentation has created some tension in the industry, with many actors referring to other initiatives in derogatory terms.

When asked, most of the possible partners have demonstrated interest in covering more than their core competence in the immediate future (we will need to understand if this is a sign of future consolidation or a "Cactus syndrome" – overstretching to get more water). For examples, software companies are planning to expand into offering co-working and incubation spaces; consultancies creating crowdsource-powered collaboration platforms, etc.

Recent signs of consolidation and scaling up of the activities in the ecosystem have been visible, with community events activities of Mobile Monday being organized in collaboration between 2 important actors in the local mobile development reality, such as Mobile Innovations and JokkoLabs. As a consequence, these activities seem to have more traction.

More details on the Senegalese ecosystem are available in the *chapter* ***Error! Reference source not found.***.

Proliferating of communities

There are a decent number of people interested in ICT at different titles, and they belong – from what we have seen – to 3 types of communities:

Community of interest, such as Mobile innovations Dakar / Thies, or Linux Interest Group. Mobile Innovations (and recently Mobile Monday) is the more relevant community for the project from what we have seen so far, given the topic and the interest that people have demonstrated.

Professional community, such as OPTIC, where Managing Directors and Senior Managers join for discussions about the future of the industry, and try to start lobbying, awareness-raising initiatives. From information gathered, this type of community is much less active, and more self-sufficient. They also have more focus towards decision-making/influencing than the community of interests.

University group: interest groups are a typical institution of Senegalese university students: students go there as a way to deepen knowledge of some curricular aspect through extra-curricular activities. These can sometimes organize knowledge exchange, workshops and even ease a career path by posting internships.

The presence of these communities is interesting for a number of reasons:

- They are an additional proof of the interest for the topic, at different levels of society;
- They constitute a natural audience for the activities of the lab. Being able to publicise the lab's activities through the means of this communities (and their opinion leaders) will be part of the communication strategies;
- They highlight the nature of the ecosystem, with activities and conversations divided among many a community.

Starting up: perceived as easier than before. Difficult in fact

From anecdotal evidence, it seems that recently the ease of opening a start-up in Senegal has been reduced significantly, with now as little as 3 days to complete the procedures. This is not in line with desk research done, for which Senegal has been ranked by the World Bank as 12th among the Sub-Saharan countries in terms of 'Starting a business'[4].

Apart from starting a business – and related procedures – our qualitative research has highlighted few problematic areas for start-ups in the mobile ecosystem; these are broadly categorisable in:

- lack of skills;
- lack of autonomy and trial & error mindset for people with higher education;
- difficulty to go to market, as operators and aggregators are rather closed to them;
- lack of capital.

Quality assurance is underestimated

More than one stakeholder has made it clear that more and more often – especially when focusing on richer interfaces – the mobile market (and therefore the competition) will become more international (or at least regional). For this reason, the services need to have a high standard in terms of technical capacities, design and business quality. The experts we interviewed have pointed out that they haven't seen attention to these elements, with specific reference to user experience, design and testing components often discarded in favour of prototypes and products that are feature-driven.

Incubation: the latest addition to the picture

Incubators are a very recent institution in Senegal. CTIC Dakar – the only proper incubator we have seen in action - has started its job in February 2011, and has officially opened in April 2011. According to CTIC Dakar, a number around 40 companies will be incubated in the next years (many of them will have a 'virtual incubation' treatment, with no desk. CTIC has developed a strong and stable selection process, which gives a rational behind the choice of companies to be incubated (see Interview with Omar Cissè – CTIC – March 24, 2011 for more details).

Other companies have taken a more informal approach: Jokko Labs is using a co-working approach, offering consulting, mentorship and coaching services to the start-ups and individuals that are member of JokkoLabs, when needed.

Other companies – e.g Manobi – are considering to experiment with co-working and incubation initiatives. They haven't finalised any of these yet.

Access to market: a bottleneck

Access to market has been highlighted as one of the most difficult aspects for small mobile service provider companies. Both operators and content aggregators have been proven to be

[4] Information controlled on the 5th of September 2011, http://www.doingbusiness.org/rankings

pretty difficult to reach for start-ups in Senegal. Even companies that have good relationship with Mobile Network Operators have pointed out this factor.

Also, for companies that have a consultancy/outsourcing proposition, it is very difficult to have access to government contracts, as small companies don't satisfy enough economic stability criteria.

Some technical enablers are not openly available

Apart from traditional VAS platform, it is becoming more and more evident that there is the need to have extra services that are at the moment not open. In particular, access to money transfer service's API (such as Orange Money) would allow services to add a transactional component that would give birth to – as it has been highlighted by many an interviewee – a new generation of mobile services, beyond the pure informational layer.

Business models of similar (mobile) labs initiatives go beyond training

From the review of labs in different parts of Africa, we have been able to see that training is considered just one of the components that the lab may offer. The successful – self-sustainable examples we have seen in our review (e.g. ActivSpaces, in Cameroon), have created a series of activities, such as consulting, incubation, event management, outsourcing, researches, … that help the training lab to become sustainable by generating (additional) revenue streams. They also expand the scope of their activities, to a fully-formed Mobile Entrepreneurship Lab.

Models of revenue generation: diversify opportunities to try what works

In our interviews and observations in Senegal, we have seen that incubators, labs and similar initiatives have developed interesting models to generate revenues. Among the most significant ones:

- CTIC Dakar are taking a percentage on the revenues from the incubates;
- JokkoLabs and Oudiamora are adding premium consulting services to their activities;
- Oudiamora is creating a sort of brokerage system for connecting developers with people that need software / digital services, and taking money as a % of the transaction.
- Oudiamora is doing premium master class sessions that generate a type of revenues comparable to equivalent activities in Europe. See more details in *the* Appendix I – Interviews with local experts & stakeholders.

VALUE-DRIVEN REQUIREMENTS

The Mobile Training Lab aims at creating a stronger mobile and web ecosystem in Senegal, by sharing and spreading practical knowledge on the technological and business aspects most relevant for Senegal. It also wants to help apply this knowledge in order to maximise the number of mobile and web services that can have a positive impact *is situ*.

Without a conscious effort to champion the creation of mobile-based services, the potential of mobile technology to stimulate growth will be at best delayed, at worst never fully realized, while other countries in the region will have an advantage in this industry.

From what we have seen in the territory, the focus on training to foster the creation of start-ups is a missing component of the ecosystem, while companies and organisations such as CTIC Dakar, Mobile Monday have recently filled other important gaps (incubation, community events).

Also, there is no specific effort aimed at connecting entreprenurs, developers and mobile enthusiasts with experts, doers and mentors in the region and internationally. Including this among the activities of the Mobile Training Lab may help its participants to fast-track the ideas for products and services they have; in addition to that, it may help them form and validate assumptions for their start-ups.

Priority of focus

During the first phase of requirement gathering, the consortium has identified a series of challenges on the ground in Dakar (and in general in the entire Senegal), which would need to be taken in serious consideration for the lab to have success in the long term. These challenges will be detailed further on in time in the deliverable **D6.7 Mobile Training Lab Business Plan**, due at M12 of the project. However it is worth noting that these can be summarised in 2 sets of challenges:

- There is a wide education gap between what Universities are currently ensuring and what would be needed to start working actively as a successful mobile technology start-up, in terms of hard skills (technology expertise; business expertise; design skills;…) and soft skills (entrepreneurial attitude; design thinking; project=-based approach; …). In particular, some Universities adopt a top-down education model that rarely facilitates the growth of a generation of autonomous entrepreneurs and disruptive innovators.
- There are a series of blockers that make it difficult for people with ideas to start their own company. They most fall into the categories of ‘access to market’ and ‘access to capital’.

These challenges are wider and deeper than the VOICES WP6 can tackle by itself. This is especially true for the removal of all the blockers. Luckily, as we have seen, there are other initiatives, which we can collaborate with, in order to make the lab’s value proposition strong, and at the same time not over-stretch it beyond what can be done. For this reason the lab need to prioritise its focus on a series of achievable tasks. The practical, advanced training activities would be the main focus of the lab, while seeking collaboration with third parties for basic ICT training, community creation and awareness, incubation and help in the access to market & finance parts.

To make sure that the activities impact the number and quality of future start-ups, the lab will be focused in selecting people that already have a projectual / hands-on attitude (see the

'Target group for the training' chapter for more details). We have identified as a challenge in the context the difficulty - for people coming from a formal top-down education – to engage in practical activities, and we have seen it associated to some of the current higher education methods. The assumption is that such an attitude would be too difficult to modify – given the budget and breadth of the project. As a consequence, we have decided to take on board people who already have entrepreneurial attitude and will benefit mostly from the course, by starting new ventures, companies, activities.

Value proposition

The core proposition of the lab is to '**empower people and communities to produce their own relevant and sustainable services through mobile & web technology'.**

In order to realise this value proposition, the lab will need to satisfy a series of requirements:

- The entire initiative must have a strong component of training and supporting voice technologies, considering the outline and purpose of the Voices project;
- It has to offer training on mobile and web technologies;
- The training should be modular, in order to facilitate participation, especially for people who have to fill in a small sub-selection of expertise gaps, compared to entire offering;
- The training should not be limited to technical topics, but include business innovation, management, design for start-ups and launching SMEs;
- The initiative should have a specific focus on the creation of applications, content and services that have a local impact, and also an attention on the lower part of the pyramidal society (see How to involve the base of the pyramid for more details on the topic);
- The style and format of the training must be extremely practical, hands-on and project oriented, as it needs to bridge a highly theoretical education, usually offered in most Senegalese higher education institutes, with the practical needs of working on end-to-end projects (as it happens in start-ups);
- The entire initiative should facilitate strong connection with other realities in Senegal (Universities, incubators, acceleration spaces,…) and in the region (other labs in West Africa);
- The focus of the initiative should be in facilitating the creation of projects that could realistically become a mobile technology-oriented start-up;
- The initiative should benefit and help highlight successes and challenges of the other working packages of the VOICES project;
- The initiative (and the training) should have a platform-agnostic approach, which will help participants to benefit from the most open and beneficial platforms for their services.

How to involve the base of the pyramid

The mobile lab aims at creating mobile services and products for underserved communities. Indeed, globally, 3.7 billion people are largely excluded from formal markets. This group, earning US$ 4 per day or less, comprises the "base of the pyramid" (BoP.) While it is highly

diversified, much of the BoP represents a fast-growing market, an underutilized productive sector, and a source of untapped entrepreneurial energy. There is a growing recognition that the poor and the private sector can be central agents in sustainable poverty alleviation strategies. This requires balanced intervention strategies, since conventional business models, modes of technological innovation and knowledge transfer seem to be incommensurable with the conditions and constraints present at the BoP. While the BoP is the beneficiary of the services and products developed by the mobile labs, these services and products will be developed via actors described in the previous section. It is however essential to engage underserved communities in the creation of these services.
Involvement can occur in different phases as described in VOICES deliverable D1.2 "Business Modelling and adoption methodologies State-of-the-Art" namely:

1. design phase
2. pilot phase
3. commercialization phase

A number of methodologies have been designed to develop solutions for the Base of the Pyramid (BoP); the largest but poorest socio-economic group. C.K. Prahalad[5] is in favour of co-creating experiences with the consumers/producers themselves. Co-creation allows for personalized interactions based on how each individual wants to interact with the company and have "interaction as the focus of value creation". The BOP protocol[6] uses the theory of Participatory Action research, originated in the social sciences and shows in its operational form many similarities with the theory of co-creation stated by C.K Prahalad. The consumer (or end-user) becomes part of the development team along with relevant stakeholders and in a period of 3 years a new product (or innovation) is developed with a sustainable environment. Participation is also in the design, especially in priority setting, rather than just product testing that was traditionally the approach taken by firms. The Human Center Design toolkit from IDEO[7] offers a number of tools to "*hear the needs of constituents in new ways, create innovative solutions to meet these needs, and deliver solutions with financial sustainability in mind".* These tools include participatory co-design where underserved community are part of the design team. It will be introduced in the mobile labs as a way to ensure ownership and relevance.
For this reason, the Mobile Training Lab will include co-creation activities as part of the training sessions, in order to help the students come up with services that are relevant to local communities at the bottom of the pyramid. This will also help the possible services to find and connect with their 'natural audience'.

These tools related to human centric design will be discussed and selected with the relevant stakeholders in the period between the release of Deliverable D6.1 and deliverable D6.2 – Training Materials.

[5] C.K. Prahalad, Coimbatore Krishna (2010). The fortune at the bottom of the pyramid: eradicating poverty through profits. Upper Saddle River, NJ: Wharton School. pp. 407. ISBN 978-0-13-700927-5.
[6] BoP protocol, http://www.bop-protocol.org/docs/

[7] http://www.ideo.com/work/human-centered-design-toolkit/

Part 2
DEFINITION OF THE COMPONENTS OF THE LAB

PRIORITIES OF THE LAB

Having analysed the findings and requirements gathered on the field, and considering the scope of the WP6 project, the Mobile Training Lab is going to prioritise two – out of the possible six components mentioned at the beginning of the document. These are:

- Creation of training activities, materials, tools and practices to create mobile services and applications suitable to become start-ups;
- Creation of materials, tools and practices for people who need specific – punctual – knowledge – to self-train and fill in small gap of expertise, via the availability of an on-line platform.

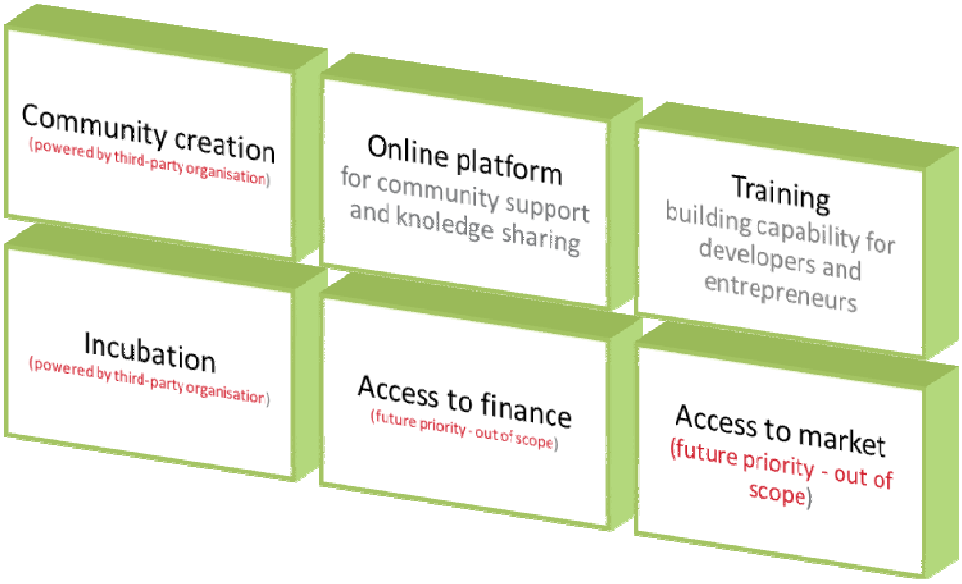


Figure 2 - summary of the components of the lab, with info on the main focus of activity and detail of where 3rd parties involvement will be required.

As we have seen above – there are few initiatives that are already taking place in Senegal, especially for what concerns community creation and incubation. The Mobile Training Lab will seek collaboration with third-party organisations to cover the other components that are out of scope for the project. The other two components (access to finance and access to market) will become a priority in the future, when there will be a significant amount of ideas and companies coming out from the training and incubation phase.

The consortium will organise a series of activities that will embody the vision and requirements for a successful Mobile Training Lab in the next 21 months. It will also put in place tools and practices that will facilitate the set-up, management and survival of the lab beyond the initial commitment of the VOICES project, WP6.

Main activities of the Mobile Training Lab

The tasks that will lead to the success of the two main components where the efforts of the lab will be focused, are:

Activities:

- One preliminary road show and training course 'taster';
- One training course of 3 weeks in Q1 2012 in Dakar. Curriculum and syllabus are detailed in the paragraph: '**Component 1:** Training *' below*. This will act as 'training the trainers' activity as well, with future trainers included in the course as participants, and extra workshops for them;
- One training course in Q1 2013; Format of this training course will differ, depending on feedback from the first course. Moreover, it will benefit from an online platform for knowledge repository and learning that the consortium is putting together.

Tools and materials:

- Screening model for trainees;
- Training syllabus;
- Online repository, sharing and learning platform for sharing training materials, facilitating discussions and foster self-learning in the region;
- Training materials, exercises and case studies available in French and made available (through the platform) under a Creative Commons license attribution;
- Assessment criteria for trainees.

Practices:

- Awareness raising materials and practices for each training course;
- Selection process for trainees;
- Training practices for trainers;
- Regular connections and updates with regional and international labs;
- Assessment and end-of-course evaluation practice for the lab.

In the rest of the chapter we will detail the elements of each of the two main components of the lab: training course and online platform. We will also provide an initial description of some aspects of the possible collaboration with third-party organisations. These will be further detailed as part of the business model definition tasks in the next few months.

COMPONENT 1: **TRAINING COURSE**

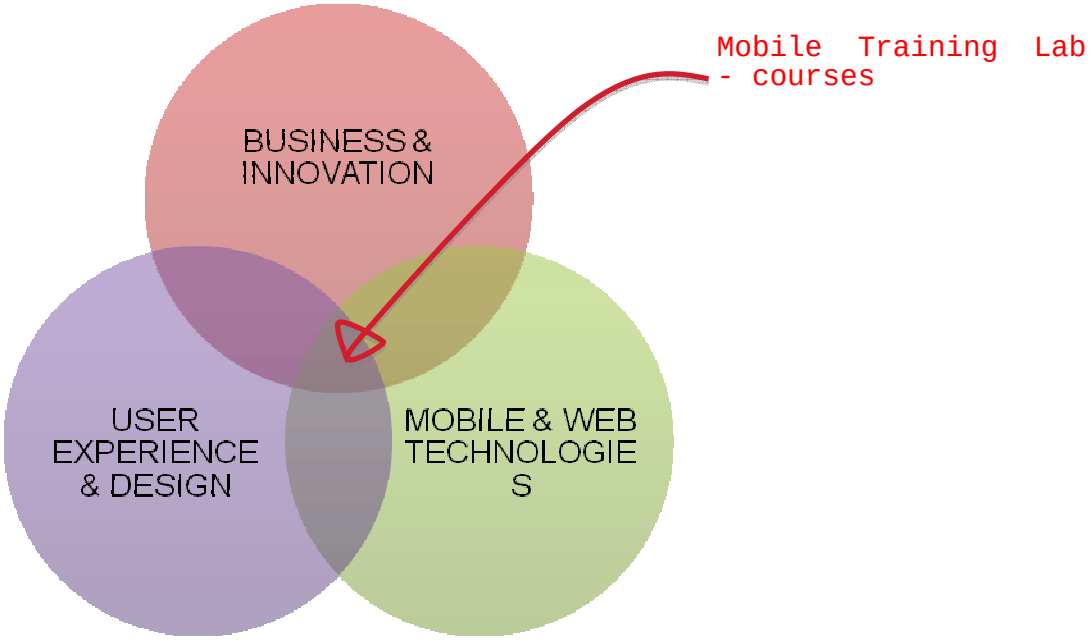
Training objectives

Given the increasing importance of the digital economy in African societies, the training wants to enable people – from different backgrounds and with varying levels of expertise – to become active participants in the Senegalese economy. The goal is to ensure that local talent is available and trained, in order to meet the growing opportunities of the mobile industry in West Africa.

Training content

The training will foster the capability for individuals and small teams to create innovative and profitable mobile services, which will harness the power of mobile and Web information and technologies. For this reason, the training courses will incorporate three main tracks:

- Business and innovation;
- Mobile and web technologies;
- User Experience and design.



The training will also have a cross-track module, where the participants:

- Will be trained on the product development process;
- Will get inspiration and advice through the presentation of success stories.

The training will be delivered through face to face sessions of 4-6 hours per day, with a mix theory (as it is an expected and familiar approach in Senegalese context) with exercises. Moreover, a large part of the training will be the application of what has been taught into a project context. Participants will work in teams for the project.

We believe the project team will be a very effective method of motivating participants, as well as eliciting peer to peers knowledge exchange.

Although the training will not have explicit time allocated to components like public speaking, team management and workshop facilitation, the style of training will involve repeatedly the participants, allowing the to improve their soft skills through practice during the course.

The consortium has put together a training curriculum that takes in consideration different aspects of this initiative. In particular, it is based on:

- Experience gathered from the other labs (Mobile Web Ghana, mLab East Africa);
- Requirements from Working Packages 1, 2, 4, 5 on the technologies that would be beneficial to their work;
- Needs discovered during our on-the-field research of potential trainees in Senegal.

And it takes in consideration:

- Need to differentiate from other courses and similar activities;
- Feasibility assessment of the syllabus.

The detailed curriculum will be refined in the next months, getting feedback from possible participants to the training, organisations in the ecosystem and experts on the ground. From initial discussions, we consider the following topics as part of a standard course:

Technology track

SMS Applications

- Mobile Value Added Services
- Protocols (SMS, ESMS, USSD, WAP)
- P2P SMS, P2A-A2P, Caller Ring back, Downloads, Email
- Installing tools, sample projects
- Tools: FrontlineSMS, RapidSMS, Kannel

Mobile Web

- Overview
- Client-side considerations in a mobile context (HTML, CSS, JavaScript)
- Server-side considerations

Voice Applications

- Voice applications
- VoiceXML
- Grammar development
- Voice User Interface design

Open Source Prototyping Platforms

- Tooling (SVN, USB key, working with communities)

- General: free software licenses
- Technology: LAMP, Asterisk,..
- Specificity / platform: developing cycle from SVN to production network

Business track

Mobile business and innovation

- The mobile ecosystem
- Business models and business plans
- Growing a mobile business

Local aspects

- The Senegalese context: IP, markets, regulations

User Experience track

User Research

- Understanding your possible users (interviews, contextual enquiries, co-design)
- Human factors (attention, affordances, reasoning and memory, etc.)

Ideation

- User needs analysis
- Concept design (brainstorming, prioritization)

Interaction design

- Information architecture
- Wireframing and visualising
- Usability testing

Within the User Experience track, the consortium will organise a **co-creation session** as well, to make sure participants to the training involve a previously-identified set of communities of possible BoP users.

Each participant to the training will follow at least 2 of the tracks. Participants will work for the entire duration of the course in teams, which will be created during the INTRO session in week 1. Each team will need to cover all the tracks and topics of the course, in order to consider their effort sufficient.

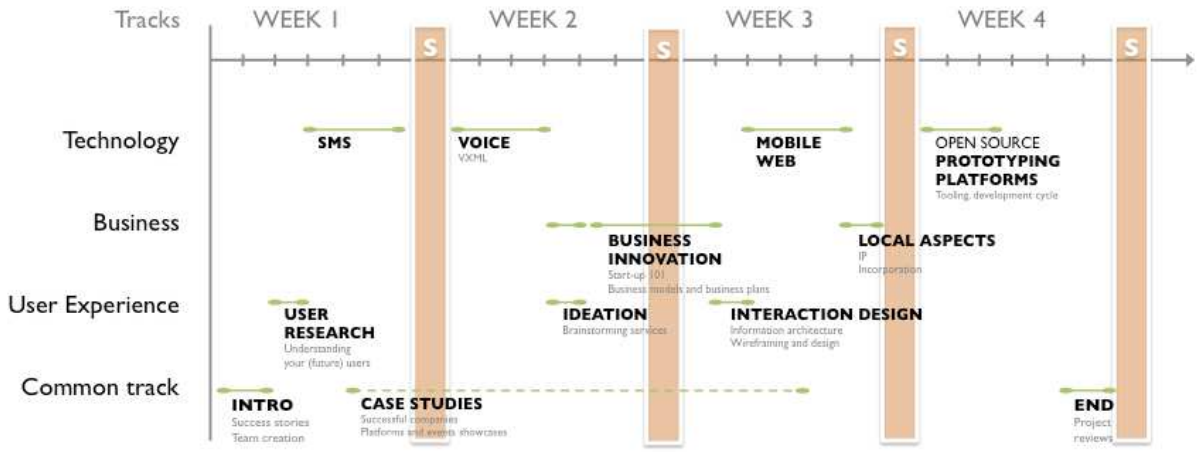


Figure 3 - Proposed schedule for first training session - draft

The training modules will be prepared and delivered by the participants to the consortium, as they have expertise in the technologies, business and design components that will be thought.

The consortium will work to expand the group of local trainers that would constitute the entire body of trainers for the program, thus leaving a longer-term impact on the territory.

Synergies with other Working packages

The face-to-face training will create benefit for the other working packages of the VOICES project, by:

- Building capacity and increasing the skills of developers and entrepreneurs that may help the pilots associated to the other working packages grow;
- Using the pilots as case studies to uncover successes and challenges of mobile development in Senegal and West Africa. This is especially true for the presentation of case studies;
- Having modules and presentations dedicated to the discovery of the platform put together as part of Working Package 2. This is particularly valid for the Voice training and the Open source prototyping platform modules of training.

Target group for the training course

As highlighted in our findings (please see the paragraph: Target audience: mixing students, graduates and professionals above), the selection of trainees with different levels of experience and background should facilitate cross-learning and give the chance to people who are demonstrating interest in developing new mobile and web services to reduce expertise gaps. The participants that we aim to select for the training courses will be a mix of:

- Students at the final year (as it is the audience with the biggest numbers of potential candidates, and the one that would create a medium-term impact of the initiative);
- Graduate that have done an internship and have no job at the moment (the target most likely to transform ideas in start-ups, and contribute to a short-term impact);
- Employees in SME (supporting the expansion of SME to the mobile platforms);

In a second wave, we may want to also target employees in large organisations and university/polytechnics professors (for specific – premium – courses). This would make the initiatives of the Mobile Training Lab have a further connection with Companies, and it would create an additional source of revenues, as the courses would not be subsidized.

Candidates will need to demonstrate one of the following prior set of skills in order to be selected:

- **Technical skills**: prior knowledge of web mark-up languages and other basic knowledge of programming languages often used to complement HTML(e.g. java, PHP…);
- **Business skills**: knowledge and/or experience with managing a small company, or successfully establishing business plans;
- **Design skills**: knowledge and/or expertise in conceiving, planning and designing an interactive service or application (mobile, web, other digital channels).

Each of the audiences will need to be able to talk to each other, and therefore demonstrate to be able to cooperate with their potential counterparts. It is very important to be able to attract people with mixed skills (technical development, business, design skills), in order to facilitate the creation of teams.

In addition to that, they will need to have a projectual – hands-on mindset.

Selection process

A specific selection will be done to select the type of people who could best suited to the approach of the lab. This will happen through a combination of activities:

- By assessing the technical, business and design skill of each of the candidate (through review of existing projects);
- By evaluation motivation and aspirations of the candidates;
- By giving a small assignment upfront to the participants and by asking them to present the resulting idea for a project.

This will take place in the weeks prior the training, and it will mostly happen through asynchronous, written communication (form submission). For specific edge cases, au audio call or a face-to-face meeting may be considered for the final selection of participants. A panel composed by consortium members and local experts will provide independent assessments in a numbered scale, which will then be considered to rank the candidates.

Incentives to participation

From experience gathered in previous projects and by talking with other labs, there is the need to design the training course so to motivate people to complete it, and keep them engaged in the future activities of the Mobile Training Lab. This is not due to the quality of the courses, but for external factors such as: need to keep a stable salary, tactics adopted by individuals to spread the risks by focusing on a vast range of jobs at the same time.

By keeping the same group of students to participate throughout the course, the training will have a higher impact and will facilitate creation of start-ups. In a different case, students would miss crucial components of the training or the trainers would need to duplicate effort with students who replace the drop-outs.

We have seen in the other circumstances that the main incentive to participation has been the creation of a post-training competition. We would need to agree with partners to see how to have a competition, and – most importantly – what are the prizes that can be made available (e.g. place in incubation,…).

Another incentive to participation that we have seen working – talking with stakeholders in Dakar (and this has been confirmed by the consortium previous experiences in other parts of West Africa), is the release of training certificates at the end of the course. The consortium thinks – however – that the initiative would be ineffective if it was simply considered a place where students could collect yet another certificate. As a consequence, the Mobile Training Lab will tie the acquisition of a certificate to the completion of practical activities (e.g. the certificate will be given upon successful delivery of a project).

Finally, we have seen that the presence of a nominal fee creates a double filter, which is positive for fostering participation: on one side acts as a deterrent for people not really committed. On the other side, it push people to benefit from something they have already paid for, and expressed a form of commitment. See more details on this topic in the Training fees paragraph.

Training logistics and administrative aspects

Size of courses

The face-to-face activities would need to have a class big enough for 25-30 people, with the possibility to divide them in teams that can move and work autonomously. In case the training will demonstrate a strong success (if the suitable requests for participation are more than 10 times the available places), the consortium could decide to extend the participation to the training to an additional number of 10 or 15 students, which will take part to the training.

Equipment needed

Provision of computer equipment has proven to be necessary in previous circumstances, such as in the mLab East Africa initiative. This is a fixed cost, and partnering with an existing institution would be the leanest way to proceed forward. One computer per person would be a mandatory requirement in order to make sure everyone can practice and work effectively. At the moment it seems that EMST is the best space for this, but further investigation needs to be done: we will seek a suitable space in the period between the delivery of D6.1 and the start of the first training course.

Technical specifications of the computers need to be scoped; however, the examples we have from Ghana and Kenya would suggest a minimum configuration (as of Summer 2011) of:

- Processor 3GZ;
- Ram 2GB;
- HD 80GB;
- Broadband connection via Ethernet socket;
- Audio card and microphone.

Software preferences go to open source OS and software, with possibility from students to install some software that is not pre-installed at the beginning of the training session. Among the software that will be needed to be installed onto the machines:

- Voice Module: Prophecy (IVR), Audacity (sound editor);
- SMS: FrontlineSMS, RapidSMS, Kannel;
- Mobile Web: Opera Mini Emulator (online);
- User Experience: Flowella, Google Drawings, Balsamiq, Inkscape or equivalent, GIMP or equivalent;
- Business: Spreadsheet editor;
- Others: Dropbox (to put files at a public URL), media manager (images, videos, sounds,…); text editor, slide presentations editor.

Training admission

As stated above, a selection process for identifying the best candidates is needed for maximising the success of the lab. A selection based on skills and attitude has been detailed above, in the Selection process paragraph. In addition to that, we have seen from previous experiences that a nominal fee makes participants be more committed to the course, while keeping the audience of possible participants wide.

Training fees

Training fees have a specific role in the scheme of the Mobile Training Lab: they function as incentives for people to keep following the course, and discourage people who would simply participate without real commitment. The consortium is fully aware of the possible negative impact in setting a fee (as this would also exclude candidates with lesser financial means). By setting up a nominal fee, however, the Mobile Training Lab will reduce this drawback to the minimum. The lab will only be able to cover a minimal fraction of the costs associated to the training with the training fee (see the following paragraph **Error! Reference source not found.** for more details). For this reason, the revenues generated through this channel will be used to cover some of the aspects of the training that have an immediate benefit for the students (e.g. catering during the training course).

The ideal solution for fees would be a tiered approach, where students and unemployed people pay a different rate from people coming on behalf of a company. However – based on the experience of the Web Foundation in Ghana - this may be very difficult to asses: candidate participants to the training may register as individuals even if they are full-time employees. So the consortium will adopt for the Mobile training Lab in Senegal a standard nominal fee for all the students, and the possibility to add – at a later stage - specific courses dedicated for companies, where the company would pay a fee for each of the individuals that it wants to be trained.

The proposed solution for training fees is therefore of a single fee – to be paid upfront upon selection of the successful candidate – of 120USD per participant. The final fee will depend upon feedback to this amount given to us from the stakeholders and the amount of interest for the initiative.

COMPONENT II: **SELF-TRAINING PLATFORM**

We have seen in the study of the existing labs, that they are progressively complementing the face-to-face training with tools and processes that help deepen and widen the relationship with students and participants to the lab. While the first training course will be a face-to-face activity, there is the need to expand the reach of potential participants and developers, by establishing an online presence that will help sharing formalised and informal knowledge, coming from the official training materials as well as participating to discussions.

Self- training objectives

The usage of a self-training system can help to accomplish the training objectives with the following advantages:

- It facilitates continued acquisition of new knowledge (lifelong education);
- It eliminates the problem of geographical dispersion of students;
- It allows greater flexibility and different rhythms of study;
- It encourages self-learning, allowing a continuous personal development of individuals, giving them greater autonomy;
- It becomes a resources for people who don't think themselves as in need of training, but require to fill specific gaps at certain moments (e.g. while developing a new, challenging application);
- It optimises resources with significantly reduced training costs, especially in time, travel and lodging;
- It ensures and promotes experimentation and familiarization with new technology and telematics services;
- It allows to form a large number of people in short time;
- It allows successive repetitions and necessary to study the materials;
- It allows to obtain faster return on investment, especially for a large number of trainees;
- It makes the content more appropriate and appealing, especially those presented in multimedia format;
- It allows to combine learning with work and family life (scheduling conflict or other work or family demands);
- It equalises educational opportunities appropriate to the needs of a given population (alone or with special needs);
- It facilitates a community of interested people, with different levels of eexpertise;
- It showcases experience and helps identify reference point members and 'local heroes'.

For this reason, an online platform that supports self-training will be made available throughout the project, and it will be integrated in the training schedules and practices.

A minimum set of **requirements** to be considered for a digital platform are:

- Content there should be available in French, as well as in English;
- Content should be downloadable or accessible in other off-line form, as internet connectivity may non be reliable enough when trying to access the content on-line;
- Content should be findable through conventional online systems, such as search engines;

- Content (or reference point to the content) should be easily shareable;
- Participants will be able to contribute and share their knowledge with others;
- Platform should be accessible, updatable and modifiable during and after the Working Package period, without the need to pay licenses or being restricted to proprietary formats;
- Training documentation, materials and information should be accessible in small chunks, to cater for an audience that need to fill a small gap of expertise rather than get extensive training on a topic;
- Platform should not be an operational, financial or technical burden for the future years of activity of the lab.

We assume that this platform, together with a good awareness and engagement plan, will help with 'organic scalability' of the initiative.

Planning the assessment of the technical solution

There is the possibility to experiment new content delivery formats for people to learn effectively, expanding from the traditional document-based training materials. However, there are a number of unknown that will need to be faced before the final decision for the design online self-training presence.

The first step is the assessment of the need for a structured Learning Management System (LMS), rather than a more unstructured Knowledge Repository System, which is simpler in its design (as well as its contribution model), but it provides fewer of the advantages of a proper LMS.

The basic idea behind a LMS is to allow a user to transform its .pdf or .ppt into a standardized LO in an automatic, simple and intuitive way. However, this evolution requires the existence of a Learning Management System platform for managing learning content in eLearning environment, as well as the application of semantic web techniques and artificial intelligence.

If the assessment will determine the need for a Learning Management System, the advantages will include the ability to create and access a set of Learning Objects (LOs) and the standardization of LOs to SCORM format. The system will then allow the exploration and generation of "Learning Objects", which can serve as a basis for educational material for end users. For a more detailed description of the Learning Management System, please read Appendix IV - Technical deep-dive on the advanced learning platform.

In addition to a system of learning objects, the project team will assess the usefulness of the activation of a system similar to WF Knowledge Repository System[8] to provide social networks functionalities and personal learning spaces for collaborative learning environment and non-formal learning.

The assessment of all the platforms mentioned above will seek answer to some open questions and assumptions that have been formulated during the requirements phase, such as:

- Identify that the online presence platform of choice will satisfy the requirement described above;
- Study the suggestion of creating "Learning Objects" from content already integrated on the platform or through resources of the platform;

[8] http://krs.webfoundation.org/

- Integration of all actors in an eLearning environment so that everyone can contribute with their own knowledge to the system, using concepts of the Social Web (or Web 2.0);
- Study and implementation of semantic search and navigation information and services to contribute to a learning process faster and more efficient;
- Study of evaluation and the degree of satisfaction of end users.

ASSESSING THE EFFECTIVENESS OF THE TRAINING

It is important to keep track of the quality and effectiveness of the training activities, as it helps refine and improve the course design, and it can highlight the need for further activities that would need to be put in place – either as part of the lab or through collaboration with third-party organisations.

Given that a series of value-driven requirements involve the need to "*facilitate the creation of projects that could realistically become a mobile technology-oriented start-up*" (see the paragraph Value-driven requirements for more info), most of the assessment effort will be put in the evaluation of practical activities (e.g. exercises during the training) as well as in the evaluation of the projects. In details, we plan have 4 steps of the training assessment:

1. Role-playing in presence and self-training from the web
2. Semi structured Interview
3. Final Questionnaire
4. Project evaluation

Role-playing and self-training on the web

As mentioned above, training will see a combination of theory and practical examples, exercises and project work.

Assessment attempts to find out what participants learn and where training needs improvement through a series of methods. Trainers will have some practical simulations in presence in order to measure how they have treated new knowledge during and after face-to face lessons and discussions.

According the choice trainees will make, the direction they seem to privilege and how they will be able to consider contextual restriction as well as end user needs, role-playing strategy will allow trainers to review part of content that might have not been treated in a satisfactory manner.

Complementary content will be uploaded to support participants in the task of formative evaluation (intermediary phases).

Exercises and computer-based interactions could also be recorded electronically, and the data gathered used as a further evaluation parameter for both students and the content delivered. Inclusion of such an additional assessment method will be decided during the next phase of work, depending on an effort/benefit analysis. In the next months, the team will define in detail the metrics to be considered for how exercises would be evaluated.

Semi-structured Interview

We intend develop a qualitative interview, with a semi-structured format, as an assessment method when conducting face-to-face training. We have identified this format to complement with the more structured assessment methods described. It will be useful to obtain sensitive data, discussing complex issues that need further explanation, and asking follow-up questions. Semi-structured interviews are especially beneficial as they allow new questions to be brought up during the interview as a result of what the interviewee says, while at the same time keeping a framework of themes to be explored.

In the next phase, the consortium will begin by determining the goals and objectives of the training session and putting together a list of questions that participants of the training session can answer. It will also define in detail the metrics to be considered for evaluation. This type of interviews should give instant feedback and allow collecting the results.

The interviewing process allows assessing instructional learning on a one-on-one basis. Much like a test or survey, we will develop a list of questions and then conduct an interview with the trainees. Interviews could give us a chance to read body language, see how trainees answer questions and notice hesitations in their answers. Most importantly, we may ask follow-up questions to get further information from questions if we don't get the answers we want from the first set of questions. To assess the interviews, we can write down the answers and compare them to others in the group; we can also use a numbered scale to rate those answers.□□

Final Questionnaire

In order to generate a complete analysis of the training efficiency, we need to evaluate prior knowledge, prior interest and cultural bases on the subject participants have and compare them with final knowledge, interest they demonstrate. The evolution of their attitude, their conception of the training arguments tell a lot about the impact of the training program. To do that, it's necessary to measure the state of things before and at the term of the period of training.

Some samples of questions that will constitute key elements for final report (but not limited to):

1. The level of motivation for didactical argument before/after
   - Substantially the same as that pointed out before
   - Significantly increased compared to that observed before
   - To how many participants (_____/total of participants)

2. The level of mastery of the topics treated is:
   - Substantially the same as that pointed out before
   - Significantly increased compared to that observed before
   - To how many participants (_____/total of participants)

3. The students show difficulty on the same parts of the training topics presented before:
   - yes, most part of them
   - not for the most part
   - without major changes
   - ……..

Project evaluation

Conducting an assessment based on performance sometimes means assessing how well the trainee does in the weeks and months after the training program. For our purposes and considering the project time period we will ask the students to work in teams on a prototype (and associated business model), to be presented back few weeks after the end of the training.

Participants should demonstrate – through their project - how they consider the local target needs, which strategies for a particular service they choose to apply and how they intend to develop and organize a new innovative service. They will be evaluated on:

- Innovative use of trained technologies;
- Quality of development;
- Consideration of user needs and local context of use;
- Quality and clarity of presentation;
- Viability of the business and structure of the business mode.

A panel composed by some of the trainers of the lab and a selection of local industry experts will do evaluation. In the next months, the team will define in detail the metrics to be considered for how projects would be evaluated.

COLLABORATING WITH THIRD-PARTY ORGANISATIONS

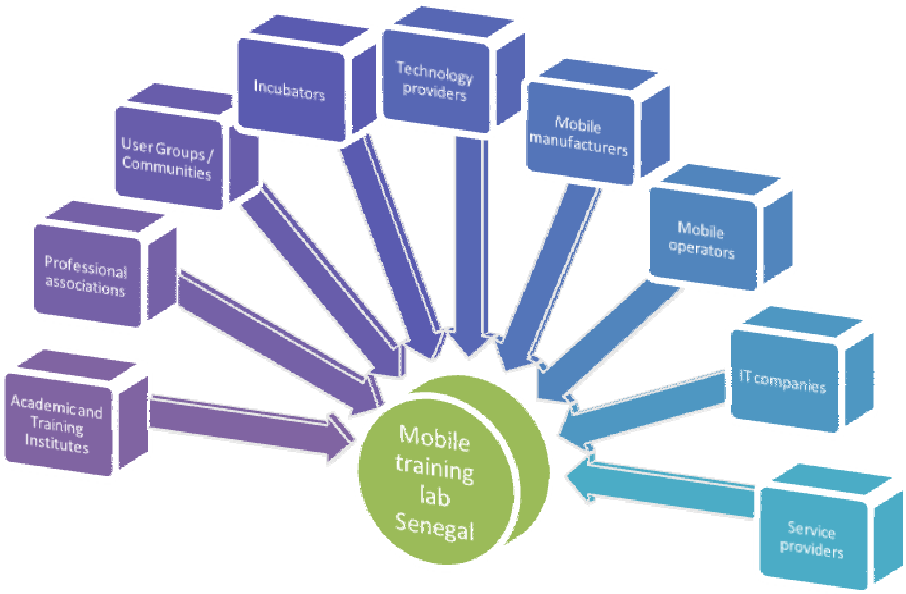


Figure 4 - Major stakeholders and third-party organisations for the mobile development ecosystem in Senegal

The creation of a successful lab depends on the ability to fit into an existing ecosystem, and to understand how to avid replication of existing initiatives, while connecting the components and offering value to as many of the existing providers as possible.

The value offered to the participants to the training depends on the type of participants or stakeholders:

- **Individuals**: skills and mind-set for starting a new business of finding a job;
- **Academic and training institutes**: further qualification of their graduates. Job opportunities for their graduates. Further qualification for their professors and trainers;
- **Professional associations**: opportunity for the members to take an advanced training. Increase of number of entities in the field in the immediate future;
- **User groups / communities**: similar to Professional associations**;**
- **Incubators**: better prepared incubates will have a better chance to succeed;
- **Big companies (technology providers, Mobile manufacturers, Mobile operators, others,…)**: More qualified employees/candidates;
- **SME (IT companies, service providers,…)**: adding mobile services to their offering;

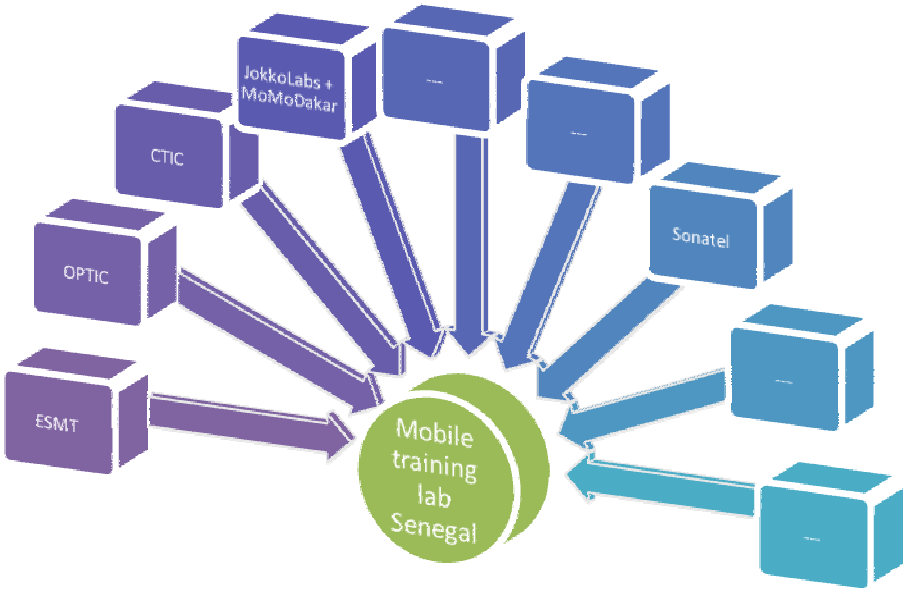


Figure 5 - Partners identified for the success of the project

For the project, we have identified that a small number of partners would be beneficial to the success, and would benefit from supporting the creation of a lab, in terms of increased visibility, possibility for them to take on more business, ability to contribute to the growth of the ecosystem and reinforce their leadership role in Senegal. We are currently seeking collaboration with the following entities:

Collaboration with:	Collaboration area	Benefit for collaborator
École Supérieure Multinationale des Télécommuications (ESMT)	Hosting training Students as part of the training (1/3): can get exposure to more expert people	Further qualification of their graduates Job opportunities for their graduates Further qualification for their professors and trainers Media coverage (local and International).
CTIC Dakar	Mentorship and review of projects Lab support and coordination Post-training incubation	Expanding the range of possible clients (projects that start from the training course) Expand range of services offered by the incubator Reinforce current clients strengths in mobile technology, business, design.
JokkoLabs	Training and project support on business innovation Post-training coaching and project support	Expanding the range of possible clients (projects that start from the training course) Expand range of services offered by the co-working space Reinforce current clients strengths in mobile technology, business, design.

Mobile Monday	Publicity	Growing their community outreach Participation of International activities – thanks to Web Foundation presence.

We consider the inclusion of these third-party organisations important for the success of the lab in the future. The members of the consortium working on this working package will work to ensure that these informal connections are kept in a more solid fashion than how initially established through this project.

Also, in the months leading to the training, the consortium will explore the possibility to partner with Senegalese Mobile Network Operators – e.g. Orange Sonatel - in order to have a viable road to market for the project, and get training support for technologies and business aspects that are specific of the country. The experience shared from different labs we have interviewed suggest us to try and involve operators once the basic elements of the lab are already in place, in order to show concrete examples of the labs activities, and ultimately to start the agreement / negotiation conversations from a stronger position.

Collaboration model

The Mobile Training Lab will act as a 'local node', a magnet for attracting developers, entrepreneurs, designers and passionate people interested in mobile, web and related technologies. Interest in the mobile and digital ecosystem in Senegal is growing, and therefore there is the need for offering opportunities to all the actors to share information and expertise, and to benefit from their respective strengths.

Local node

During our on-the-field research, we have connected with a series of institutions, initiatives running on the ground already (see ***Error! Reference source not found.*** for details), each one with their own core focus. Some of them are extending their expertise beyond their core value proposition, but they still haven't succeeded in all aspects (training, mentoring, incubating, organising community events, providing routes for access to capital and to market).

The lab will have an important role in creating connections among initiatives, rather than replicating them, and at the same time facilitate interchange between the projects on the territory. By liaising with realities that have already established a (niche) community, our lab will benefit by having a community of interested people as a possible audience.

In our research of similar models, we have seen 3 possible partnership models:

- **Single partner**: that can be complementary to the strengths we would provide, as a consortium. We have seen this applied in Ghana, as the Web Foundation has kick-started the activities by creating the Mobile Web Ghana group, which is the main lead of all the lab's initiatives.

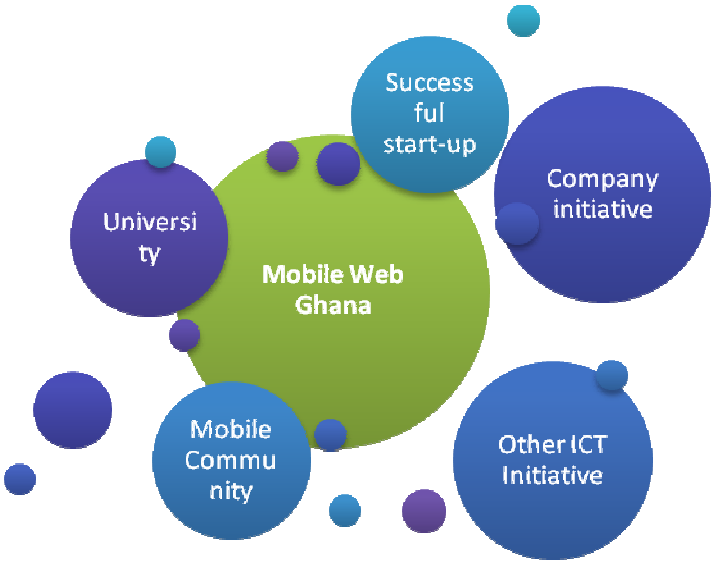


Figure 6 - Model for the Mobile Web Ghana initiative: the Web Foundation has backed the entire initiative, with friendly 'satellite' institutions that lead some aspects

- A **flexible** association of a small number of stakeholders that **team-up**, covering different aspects (e.g. training, consulting, incubation). In this case one partner would be the leading one in any case.
- A **formal consortium** that is established – expecting this to have a formal structure that will tender and apply for funding to other international institutions and foundations. We have seen such case formalised in a consortium among a University, a company, an incubator and the International partners with expertise in mobile for development and entrepreneurship. We have seen this applied in Kenya, as the mLab East Africa is composed by a consortium of 4 equal partners, each providing different strengths and taking responsibilities for some of the components of the project.

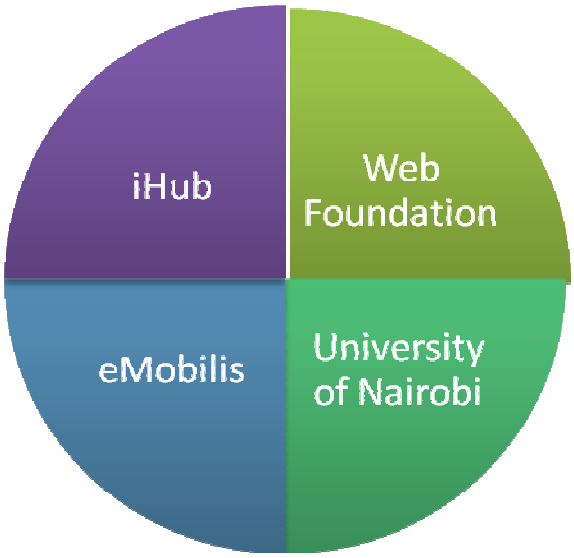


Figure 7 - Organisational model of the mLab East Africa: formal consortium of equal partners

Considering the set-up and the context found in Senegal, we propose the adoption of the 'flexible team-up model for an initial phase of the project. This may lead into a more formal consortium once the basic operations are put in place, and a visible impact has been demonstrated.

Figure 8 - Possible organisational model for the Mobile Training Lab in Senegal: the lab relies on existing initiatives for most of their activities

Regional and International node

The lab will also be a node in the international network of labs where the Web Foundation (and connected organizations) is active (Mobile Web Ghana[9] in Accra, Ghana; mLab East Africa[10] in Nairobi, Kenya). Activities that will put the Mobile Training Lab on the network of existing labs include:

- Lab trainers' participation to activities of other West African labs (e.g. Mobile Web Ghana training, competition, conference);
- Availability of a community and knowledge sharing platform that will connect the lab with other labs in Africa and other regions of the world (e.g. South East Asia), in order to share practical advice, documents and processes;
- Mention of the lab activities in external communications (conferences, papers, blogposts,…) from all the members of the Working Package (Web Foundation, TNO, PT Innovação, CRS4), which will raise International awareness of the lab and its activities;
- Participation to regional and international workshop and conferences to promote results achieved by the lab.

[9] www.mobilewebghana.org

[10] mlab.co.ke

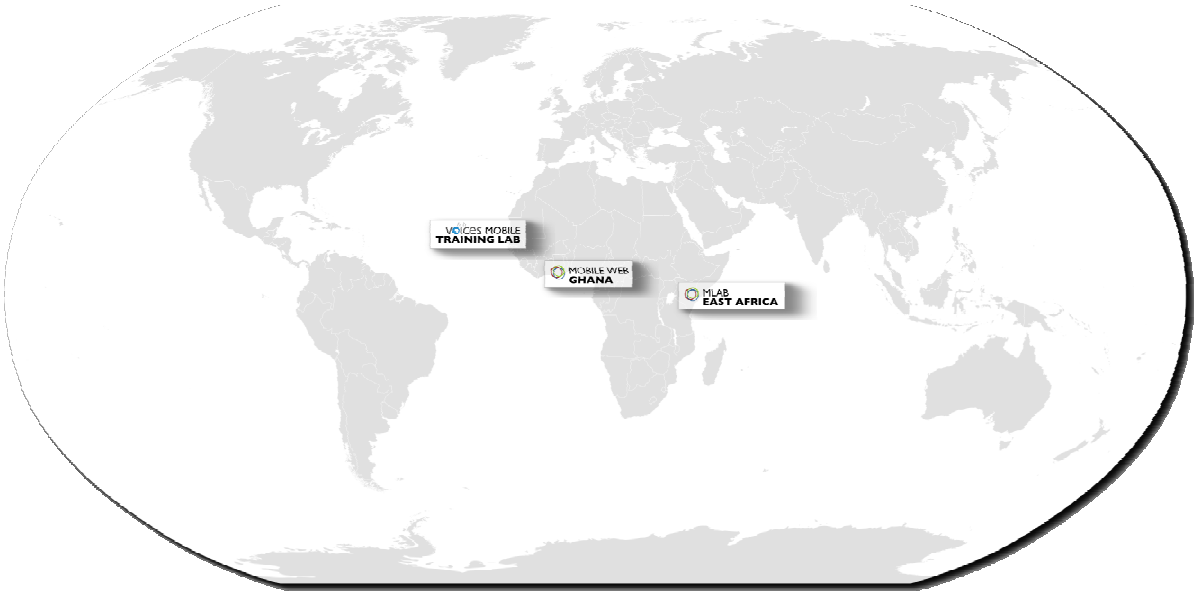


Figure 9 - Voices Mobile Training Lab as a node of an international Network

Liaisons with existing communities

The interest for mobile design, development and business has been spread in Senegal in the past few years through the activities of a series of communities. One of the most successful is the Mobile Innovations meet-up[11], which has been meeting since the beginning of 2011, and which has emerged from the collaboration between Mobile Senegal[12] and many academic and professional institutions in Dakar. Starting June 2011, the Mobile Innovations meet-up – together with JokkoLabs[13] - has evolved into Mobile Monday Dakar[14], thus creating the second Mobile Monday chapter in West Africa. The Mobile Monday community is widely known and respected, and we have evaluated they are in the best position to organise and make the community thrive: Mobile Monday is an open community platform of mobile industry visionaries, developers and influential individuals; it helps fostering brand neutral cooperation and cross-border business opportunities through live networking events to demo products, share ideas and discuss trends from both local and global markets. It started in Helsinki Finland, in 2000, and as of today Mobile Monday events are organized in over 100 cities worldwide.

[11] http://www.meetup.com/mobileinnovationsdakar/

[12] Mobile Senegal is a network of people interested in mobile technology for development in Senegal. It organizes, facilitates and partners with other instances in the organization of bootcamps, trainings, competitions, and workshops on mobile technology. Its mission is to disseminate the use of mobile technology and share information on the subject in Senegal and elsewhere. (from http://mobilesenegal.com/).

[13] JokkoLabs is a recently opened co-working space, which offers community aggregation activities, research and consultancy. For more information, please refer to the Appendix III - JokkoLabs - Senegal. Also, updated news and information are available on their website: http://jokkolabs.net/

[14] http://www.mobilemonday.net/06/2011/mobile-monday-debuts-in-senegal-hello-dakar.html

The Mobile Training Lab will liaise with the Mobile Monday Dakar initiative, and will help attract local and international speakers, case studies, support thanks to the presence of other labs, and to expertise on the mobile industry that the partners of the consortium have established in the past 15 years.

We have seen in other projects that the establishment of a training lab helps a small community of mobile passionate to grow, by bringing people who are new to the community, and creating a virtuous circle. In order to do that, there is the need to facilitate the trainees' first interactions with the already established community. For this reason the trainers of the lab will act as 'buddies' in introducing the students to the Mobile Monday Community.

The consortium will also work to attract to Dakar different types of informal gatherings for mobile entrepreneurs, designers and developers (such as: *hackdays*, *seedcamps*, *start-up weekends*, *BarCamps* and *Design Jams*). These events will unite the learning-by-doing aspect with an incentive to work on the product even after the event, under the form of follow-up presentations to the community, publicity, and – if further exploration confirms initial assumptions – small prizes. We have seen in the recent months interest from events such as AppCircus[15], Garage48[16] to organize events in West Africa, and we think the next 24 months will see a spontaneous raise in the number of these events. The consortium will therefore work to make sure these maximize their impact on the community. Given the autonomous expansion of such type of events, the consortium will not organize one such an event, but rather facilitate some of these events to happen by increasing the number of potential participants (through the training courses).

Figure 10 - Jenny deBoer (TNO) at the beginning of a presentation on mobile and innovation at the Mobile Innovations event in Dakar - Arpil 2011

[15] http:// http://appcircus.com/

[16] http://www.garage48.org/

Figure 11 - Audience at Mobile Innovations in Dakar - April 2011

Figure 12 - Leaflet for the launch of MoMo Dakar – June 2011

Part 3
MAKING THE LAB WORK

In the third part, we highlight some of the activities that would need to be done as a corollary to the two main components described above. These are mainly realted to two aspects:

- Establishing a solid identity, and promoting the activities of the labs;
- Assessing performances of the lab.

We will also preview some of the information about the sustainability of the lab; this is going to be further detailed in the deliverable D6.7, as per the initial plan.

Finally, we present an updated project plan, which keeps the activities and milestones identified at the beginning of the project, and provides more details in terms of tasks, efforts and times.

PROMOTION ACTIVITIES FOR THE LAB

Pre-training and post-training activities as promotion mechanism

As suggested by some of the case study, one promotion activity which is not immediately controllable is via word of mouth (WoM). Mobile labs in Cameroon rely entirely on this technique to ensure proper promotion. We will try and make sure that WoM promotion is maximized, by seeding a series of small activities prior to the training course, such as:

- Presentation in Mobile Monday events;
- Diffusion through influencers and pivotal experts in the community;
- Promotion through students and trainers of similar initiatives in West Africa, that have a connection and network in Senegal.

More structurally, the following activities could be envisioned:

- Pre-training
  - Local outreach via radio (interviews, news);
  - Posters in settings relevant to the target group (University for students target group);
  - Specialized press related to ICT;
  - Online marketing via social media (Facebook, Twitter, Youtube).
- Post-training
  - Promotion of winners of competition in adequate settings (via a price ceremony in an university settings);
  - Publication of KPIs related to impact (number of people approached) in specialized press;
  - Online marketing via social media (Facebook, Twitter, Youtube).

Some of the promotion activities may require an economic investment. The Lab will seek collaboration with third parties to put those in place, or will adopt 0-cost techniques (similar to *guerrilla marketing* activities) in order to minimize the budget required.

IDENTITY OF THE LAB: BRANDING, AFFILIATIONS

As mentioned above, the Mobile Training Lab will be part of a wider network of training and incubation labs that have started emerging in the past 18 months throughout Africa. For reasons of similarity and affiliation with other initiatives in West Africa (e.g. *Mobile Entrepreneurs in Ghana*), the lab will be named *Mobile Entrepreneurs Lab Senegal*.

The local partners will be recognizable and made visible thanks to the 'powered by' affiliation. In every communication opportunity, therefore, the Mobile Entrepreneurs Senegal lab will be described as 'powered by' the VOICES project, and – in case of expansion of the collaboration to other parties – the third-party entities' names.

The training lab will also participate in a community of practices of the training and incubation labs that is being formed in these months. This will include the labs in Ghana and Kenya, in which the Web Foundation is actively participating.

This community may also extend to the labs opened through InfoDev's mLabs initiative[17] (in South Africa, East Asia, South Asia, Europe & Central Asia). This will facilitate knowledge exchange and visibility of the lab's initiatives.

The 2 main actions associated to this will be:

- The creation of a lab's section in a community portal for the different labs, named SWITCH (currently Work in Progress, due to be open in beta in October 2011);
- The participation of the lab trainers and facilitators to workshops and seminars on mobile for development, which are organised annually by the Web Foundation.

[17] http://www.infodev.org/en/Project.116.html

PERFORMANCE ASSESSMENT OF THE LAB ACTIVITIES

The evaluation of the mobile lab and the outcome generated by its activities will be based on two sets of evaluation trajectories:

1. a qualitative evaluation based on story telling and a questionnaire composed of open-questions (e.g., what did you like about the training? which part (s) where the most inspiring)
2. a quantitative evaluation based on predefined Key Performance Indicators (KPIs). A tentative list is provided below:

Outcome	KPI

Volume	• # trainees
	  o Students
	  o Professionals
	  o Unemployed
	• # partnership
	• # jobs
	• # start-ups

Quality	• # satisfied trainees • # drop out rate • # success final assignment • # recurring attendees
Visibility	• # visit on elearning / knowledge sharing platform • # downloads • # visit on website
Sustainability	• Fee • Cost • Cost per student (trend)

Determining impact

The impact of the lab represents how the lab extends the effect of its outcomes over time. The lab wants to impact on the local context, following two type of criteria:

1. Facilitate the increase the number of locally relevant content, by facilitating the application of the knowledge to the creation of new services & tools. This will mean be able to address and guide people to the creation of their own start-up organisation.
2. Maximise the possibility that skills will be applicable in industries at the end of the participation. This would help people find job in existing companies. From evidence gathered during our interviews (see Appendix I – Interviews with local experts & stakeholders) – however – this is the most difficult of the objectives, a there is a considerable scarcity of qualified job offers for the field.

These impacts are not the measures of success of the initiative, but the consequence of such success over time. We plan to observe and measure impact as well, although not associate it with the success of the project – for the moment. Further activities (e.g. incubation) would need to be put in place for the lab to be measured against the criteria mentioned here above.

SUSTAINABILITY OF THE LAB

This paragraph is a preview of information that is going to be further detailed in the deliverable D6.7. It is important to include this here to make sure that requirements and activity plan include a look at the sustainability of the lab.

Revenue-generating activities

After a thorough review of other projects – and their key factors for success – we have identified that labs have all enriched their training activities with parts that are going to make the lab self sustainable.

Overall a rich portfolio of income generating activities is used to ensure financial sustainability of the labs. As a consequence, we believe that additional services should be proposed by the lab that responds to the same value proposition.

The following items will generate revenues for the mobile labs

- **Training fees**. Pricing will be adjusted in the course of the VOICES project. Especially a differentiate pricing will be adopted based on the target group and the fact whether the training concludes with a certification (premium training);
- **Thematic events**. Around a global trend (e.g. social media) or mobile technology, participants will pay a fee to attend;
- **VC/Incubation**: labs have demonstrated that either incubates or investors in the start-up can contribute financially to the mobile lab; we will seek collaboration with existing actors, and identify a suitable agreement for both actors to have a mutual benefit;
- **Consultancy**: in order to increase ICT capacity of the mobile lab trainees and employees consultancy services can be provided. Either via direct acquisition or via retention of part of the contracts acquired by trainees.

In the next stage of the mobile lab creation, these 4 streams will be quantified. While streams 1 and 2 are immediately available to the mobile lab, stream 3 and 4 requires mid-term engagement due to the need of having either mature start-ups or past trainees. The Mobile Training Lab will therefore plan to expand their activities and become a proper Mobile Entrepreneurship Lab. However, it is to remark that these activities are not included in the scope of the current project, and will require external efforts (resources, partnerships) to be completed.

Cost Structure

The revenue-generating activities will balance the costs that the activities associated to the Mobile Training Lab Training are creating, such as:

- Venue for training;
- Training preparation and delivery (including translation where needed);
- Extra cost for training (stationery, catering if needed);
- Technology;
- Marketing activities.

Some of the costs associated to the training lab would fall outside of the scope agreed in this project, as they involve the payment of third parties for the rental or purchase of goods, as well as for the delivery of a service. The consortium is seeking collaboration with other institutes, companies and communities to share responsibility on these costs, through sponsorship, joint effort or grants.

Thanks to the experience gathered by the other labs – especially those in Ghana and Kenya - the consortium has forecasted the rough estimate of costs that are not going to be covered by the VOICES project. These include, approximately:

Session Organisation	
Venue	$2,500
Extra cost for training (stationery, catering)	$3,000
Technology (A/V recording, hardware,…)	$3,000
Local speakers	$400
Marketing	$6,000
TOTAL for Session Organisation	**$14,900**

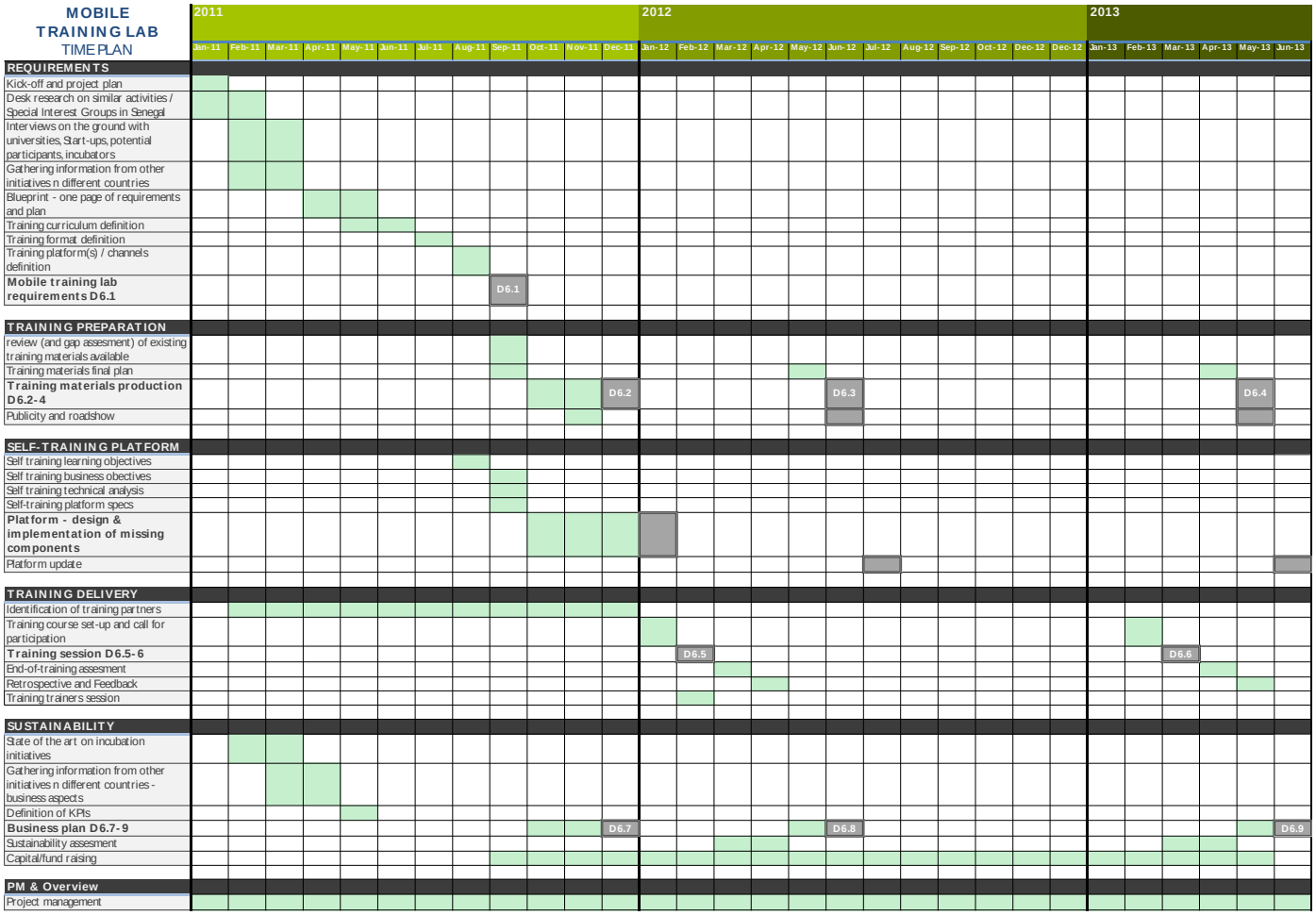
In addition to this, the consortium would need to consider a series of additional costs that would be required to transform the Mobile Training Lab into a full-scale Mobile Entrepreneurship Lab. These include:

- Staff (personnel to be determined);
- Office;
- Administrative support;
- Communication and marketing activities;
- Online presence (website + internet access);
- IT hardware (e.g., computer for staff);
- Temporary capacity for punctual activities (events).

In the period between the production of this document and the first training, the consortium will work to finalise the collaborations needed to reduce these costs. In particular, it will work towards the creation of an informal network of local actors, that would take responsibility for some of the session organisation and trainers costs, in exchange for a series of mutual benefits, as described in the chapter ***Error! Reference source not found.***.

In the following phase of WP6, the cost structure will be aligned with the quantification of the revenue streams to assess potential cash flow gaps. This will be detailed in the **Deliverable D6.7**.

PROJECT PLAN



The consortium has identified what are the activities that need to be completed in the remaining years of the project, in order to succeed and create a Mobile Training Lab that will be capable of having an impact in Senegal.

Each of the major activity - as highlighted above – have a formal delivery at their core.

Requirements

The set of tasks currently at the end have helped the consortium connect with local experts and successful realities in Senegal and in Africa in general. We have identified a series of needs and requirements, and have put together an action plan, which is the core of the deliverable D6.1

Training preparation

Creation of training materials and formatting both for face-to-face and self-training consumption. The production of training materials in month 12 (Deliverable D6.2) will be updated 2 times in the following months (D6.3 and D6.4).

Self-training platform

Creation of a platform for self-training and knowledge sharing to help individuals and groups to increase their skills and expertise, and at the same time work on a specific project that will become start-ups. The platform will be used especially during the second session of training, after careful beta testing.

Training delivery

The proper training courses: the first one (D6.5) mainly having international experts to engage students in a face-to-face direct course. The second one (D6.6) harnessing the power of the training and knowledge repository platform.

Sustainability

Assessment and actions taken to define and improve the business model of the lab; three different business plan documentation will be presented (D6.7-9), in order to keep track of the successes of the lab, as well as presenting the strategy for making the lab economically viable.

As part of the ‘Sustainability’ activities, a task has been set-up for the members of the consortium to start identifying possible external sources of revenues and donations, which will help grow the scope of the lab on one side, as well as extending the life of the lab.

CONCLUSION

In this document we have detailed the requirements identified to proceed with the creation of the Mobile Training Lab in Senegal, as part of the VOICES project. We have seen the need to work beyond a face-to-face training, towards the creation of self-training tools. We have highlighted the possibility for the lab to scale up in the future from a Mobile Training Lab, to a full-scale Mobile Entrepreneurship Lab (through collaborations with third parties.

In the following months the consortium will work on multiple working strands, in order to make sure the project will follow the presented plan. In particular, activities to perform include:

- Preparation of training courses and materials (including training assessment);
- Definition, design and build of the self-training digital presence;
- Consolidation and detailing of the business requirements, and production of a first business model documentation for the lab;
- Liaison with companies, organisations and individuals on the ground, to facilitate the work on the previous strands.

Part 3
APPENDIXES

APPENDIX I – INTERVIEWS WITH LOCAL EXPERTS & STAKEHOLDERS

Interview with Papa Lamine Sylla and Andre Onana – ESMT – March 24, 2011

History:

ESMT is founded in 1980

They had 50 students in 1980

ESMT is located in Benin, Burkina Faso, Guinea, Mali, Niger, Mauritania and Senegal

They have 800 students in 5 different classes

Direct relationship with specific secondary schools, in order to attract right candidates (no more information revealed on this point).

Their courses:

ESMT has courses in Management, technical development, and computer systems

200 students participate in Management course

The management course takes 2 years

There are 3 teachers employed at ESMT for the management course

Approximately 20 teachers from outside ESMT are involved in the curriculum

Teachers from outside have positions in companies

After 2 years students receive a CAMES certificate, which is internationally acknowledged

There is a scientific club of students, which covers all domains of ESMT. Activities in the clubs are extra-curricular formation and training. Clubs are facilitated by Coaches, people belonging to the R&D dept. of the university. They do (very basic) mentoring: writing a letter, …)

Recruiting of students through TV, Journal and newspapers in 8 different countries

They have an entrance test

There is a Junior enterprise program, as a form to connect industry and academia. It is not very developed. Mostly focused o the request from companies to have people doing small, replicable tasks (e.g. survey of the quality of service of the mobile networks). Projects are assigned by the Junior Enterprise program.

There is a diploma at the end of the 2-year courses.

In specific occasions, ESMT organises small – in-situ- training courses for companies and employees. No example has been given, though.

Business model:

It was started with financial support from ITU, French cooperation, Swiss cooperation and Canadian cooperation.

Orange was one of the main funders.

Since 2000 ESMT does not receive funding anymore

ESMT gets revenues from scholarships and fees of students

Private students pay 1 million CFA for ‘technicien-level’ course

State or enterprise students pay 2 million CFA for ‘technicien-level’ course

These prices are doubled for ‘engineer-level’ courses.

What ESMT (students) need:

- There is a need for coaching of students

- There is no ambition to start own company for students; if a student finishes the course, they want to look for a job: according to Pape Sylla, in Senegal it is perceived less honourable to be an entrepreneur than to be a full-time employee. A person who studies has a full-time job. People who didn’t have desire / skills / time / energy for studying – on their contrary – start their own company.

- Now it is difficult to find a job, so there is less risk and more incentive to create your won company

- In Senegal it is possible to start your own company in three days, registration process is easy

- How to create a business plan

- Teaching of creativity and innovation of mobile services, brainstorming techniques, as potential in the people is currently not exploited.

Interview with Omar Cissè – CTIC – March 24, 2011

History:

- CTIC started as incubator in January. Official launch will be the 19th of April 2011.
- They received 50 applications of people in first round that want to start their own business, but don't know where to start to do so
- CTIC selected 3 companies, provide them with pre-incubation.
- They aim at having 2 more physical clients in the next month
- They want to create 20 virtual clients (clients that will be followed in the pre-incubation phase, but not
- They aim at having 10 physical clients
- Want to build another office, for another 20 companies
- April 19th is the official launch of CTIC
- Attending the Global Forum for information and empowerment in May in Finland

Organisation:

- Applicants have to apply to present services, 40 applied, 30 were invited
- They have a pre-incubation program: 3-4 months of feasibility studies and business model and help to get ready for incubation. Assessment if they have the potential for an entrepreneurs and if idea has potential. They are using an IDEAS (?) methodology for assessment of the potential candidate.
- Profile of applicants for incubation: companies that exist already, but are at an early stage, and need services to grow
- Selection of applicants by selection panel of Optic, Sonatel and a bank; 5 presented, 2 were selected
- Selection process: currently experimenting with models, early assessment of projects not possible to use standard tools
- targeting audience through TV, newspapers and emailing list (own database), most famous newspaper Seneweb, Events (Google event), ICT ministry. Events are most effective
- Omar has had own software company 2SI (?), creating mobile solutions for Orange, banks,…

Business model:

- pre-incubators pay a small fee
- CTIC doesn't' own shares of the companies they incubate; they receive 9% of the growth of the incubator companies
- It is aimed that incubators are self-sustainable in 5 years
- Incubatees pay rent for hiring the facilities (building, office space)

- Start of CTIC is funded by Worldbank (270.000 dollar), France Telecom provides technical assistance (120.000 euro),
- GTZET provides knowledge on financial matters
- ARTP provides knowledge on regulations in telecommunications

What CTIC can offer to mobile training lab:

- Focus on involving SMEs, they already have experience in entrepreneurship. Students might be more difficult to create sustainable businesses
- He would also target people who have desire to start their companies, and don't know how to do it. People who are not working, but are not students anymore.
- Contacts with donors, sponsors.
- ICT hub, eco-system of 21 people in board. Develop maximum amount of companies

What CTIC needs:

- Training that is also interesting for SMEs
- Include banks to make structures working for VC/investment
- Development platform, perhaps EmergInnov is an option, although it is a prototyping platform, not a launching platform
- Help identify maximum amount of entrepreneurs
- Help focus on mobile solutions
- Give technical assistance to SMEs
- Operators, incubators and trainers need to be involved

Interview with Guillaume Debar – Tostan (Jokko) – March 24, 2011

The Jokko Initiative aims at create community engagement and support learning via mobile services and a set of procedures around them. It includes:

Participatory learning of mobile usage: During the second phase of Tostan's Community Empowerment Program (CEP), participants are introduced to literacy, numeracy, and project management skills. The problem identified was that - at the end of the program – skills were not successfully retained, a not useful for the kind of life routine the participants have. With the addition of the Jokko segment, participants are taught how to use standard cell phone capabilities and SMS texting as a relevant tool to reinforce their literacy and math skills, sustain relationships, and facilitate income-generating activities. This is done using traditional modes of education: the mobile phone module presents the phone menu using the analogy of a mango tree. The phone-learning module lasts 2 months.

As a pedagogical prop, they provide 15 phones each training. These will be then given to a local charity

Additional services and VAS: among the others:

RapidForum: SMS-based discussion group used for sharing information about community-led initiatives. Developed using RapidSMS, it allows users to join a virtual community after which community members can send a single message that is then disseminated to the larger network. The forum provides a platform for community members to exchange information and ideas.

JokkoTelecenter income generating activity for the Community Management Committees (CMCs). In partnership with the Rural Energy Foundation , CMCs are provided with training and the initial materials for portable, solar-powered charging stations. Communities can use these charging stations to charge mobile phones and as a distribution point where small amounts of credit can be sold. It takes 5-6 months for the owner of the box to pay back the box. He receives 15000 CFA income a day, can charge 15 mobile phones

RapidMonitor real time reporting service for

local development activities, provides data about community-led activities so that Tostan's Monitoring, Evaluation, Research & Learning Department can analyze where the Jokko Initiative is seeing results and what areas still need improvement.

JokkoDiaspora reach diaspora people through mobile

History:

The Jokko Initiative is a project started by Tostan, in collaboration with UNICEF, to make the Community Empowerment Program evolve. The CEP has been developed during the past 20 years, and has helped communities in 10 African countries to understand and transform their communities through a 30-month program for non-formal education of rural communities. They have trained and involved 160000 people, 90000 directly. 80% women and girls participate in this programme.

The goal is to be involved in 2000 communities by 2012.

Training programs start with a 15-month of discussions and participation on topics such as human rights/democracy/health and hygiene. During the second phase, participants are introduced to literacy, numeracy, and project management skills.

Organisation:

Tostan's Jokko initiative is related to the post literacy activities: it uses text based interactions (OS menus, TXTs) to help retaining reading skills.

They have studies and perfected training techniques (and props) in the past years, in order to make learning a very natural activity / fit in the context: theatre / roleplaying; big writeable posters (by sticking them on a blackboard); physical paths to move through;…

As a follow-up of the mobile training, SMS services were invented: rapidforum, rapidreporting, telecentres. Rapidforum and telecentres have been piloted

The Jokko initiative is at the moment on hold, as a consequence of a positive project assessment: the people responsible for these have now be put in charge of the redefinition of larger Tostan's project.

Business model:

Tostan Jokko was financed by Unicef. The initiative has no goal of generating revenues in itself. The additional VAS to be created as part of continuation of the program can – in theory – generate some income to the initiative. At the moment – however – there is no sustainable business model for the rapidforum and other SMS services; because of their core competences, Tostan decided to focus on their 30 month programme and will not proceed with actively developing SMS services.

The Telecentre has a relatively stable business model and can help someone to make money in the long-term: It takes 5-6 months for the owner of the box to pay back the box. He receives 15000 CFA income a day, can charge 15 mobile phones.

One of the other parts of the initiative that has a ‘business-like’ consideration comes after the training: the 15 mobile phones that were used in the training are brought to the community manager who cn re-purpose / resell them.

What Tostan (Jokko) can offer to mobile training lab:

- Use Community Centres (CMCs) as sounding board
- basic training to communities, they didn’t seem to be interesting to tune their training programme for us specifically

What Tostan (Jokko) needs:

- bridge between developers and eliciting user needs
- services they can use (but they can hardly be involved in developing those)

Interview with Karim SY– Jokkolabs – March 25, 2011

For main details see case study

What Jokkolabs can offer to mobile training lab:

- Space for start-ups (not for free)
- Competence on business models and processes
- Support in community building
- Some connection with start-ups that may need some mobile support

What Jokkolabs needs:

- Support in the engagement of mobile passionate (especially in the field of design
- Training on mobile technologies

Interview with Joeri Poesen – Bantalabs – March 25, 2011

History:

Joeri Poesen has moved to Senegal little more than one year ago. He was working in a Belgian company and was made redundant, so he decided (with family) to move to Senegal. He was also owning a small drupal shop, so they have expanded that to enegal.

Organisation:

BantaLanbs is an attempt to mix a Drupal development agency with a co-working space in St. Louis (the old French colonial capital).

The main working effort at the moment is on web development for clients coming from abroad France). Some little activity coming from mobile versions of web development websites (conferences' mobile sites, with features such as: streaming live conference sessions, twitter sentiment,…).

It is rather difficult – at the moment – for them to find relevant clients based in Senegal. They have also experimented with some Drupal modules, hoping to support products and services to create mCommerce mini-sites. They have connected Drupal with a payment gateway. But mobile money services in Senegal are far from being open (e.g. to Joeri's knowledge, Orange Money doesn't have an API).

They have some competition that is basically focused on offshoring (People Input; Centicat).

Business model:

projects for Europe

it's difficult to pass through the thick layers of connections, in order to get projects with NGOs based in Senegal, or Governments.

What Bantalabs can offer to mobile training lab:

drupal community in West Africa through DakarLUG, Geekdinner

Drupal knowledge

What Bantalabs needs:

some place where to showcase projects.

skilled young developers: people from Uni have a good background, but they have 0 practical skills to develop, and they have no idea of project management or entrepreneurship.

access to community, user needs, user involvement

training on design, interaction design, mobile phone service development

access to platform for development

support in making clients understand that not everything need to be for ‘Today’, and that strategic investment for future assets are necessary.

access to an Ad Network: as much as it’s not really appreciated, it’s an important revenue streaming model, if available). SeneWeb is trying to build one but it’s not there yet.

African customers, there is hardly a need for proper websites, also no vision on why they would need a website (rather go for a mobile website?)

need to have access to telcos and banks (and their backends), in order to make innovative projects started

Interview with Abdoulaye Kante – Oudiamora – March 25, 2011

History:

Oudiamora is social media platform aimed at helping reach some of the millennium development goals. They focus on mobile for social innovation, especially for Health, Education, Gender Empowerment, Agriculture, environment.

The mechanism works – in theory – to connect a social enterprise and a developer: the entrepreneur asks for an issue to be solved, and developers solve it, posting a mobile solution on the system.

The initiative has started very recently, in January 2011, and there is nothing solid to evaluate the idea, except a high ambition (own words). The project is at the moment trying to raise awareness of potential developers. The initiative is not officially launched yet.

Laye is owner of the consultancy company Lynk4Dev, company that advices of web 2.0 & mobile, as well as doing some training in social media. Among the projects he is working on, there are geo-map + knowledge management for a French company; projects on social media 4 health.

Organisation:

He plans to start building a platform for development (sic!) as well, to allow entrepreneurs to access the platform.

First he wants to go to Casamas area to Benchmark

Laye thinks that similar initiative are Text to Change, Ushahidi, Frontline SMS and Apps4dev, as they are also in mHealth and Mobile

in 1 year he aims to have 20 people involved in mobile solutions

he likes to work with students, not necessarily from public university.

positive: it's a new technology, and he wants to introduce ICT4D in the curriculum

negative: first intention of students is to find a stable job

there is a need for rich content in all oral languages

Business model:

Developers will sell the applications to the entrepreneurs. In this way, the service will gain revenue (sharing – 75% developer; 25% Oudimara)

fundraising is also a possibility

Abdoulaye works for Link4Dev, a consultancy form. He works on topics open data, enterprise and social media. He co-manages the firm

he did a project for a French company, a project on knowledge management, climate change, and created a participatory map. They advice NGOs on how to use Voip, video conference, networking and communication

when Abdoulaye gives training, he gives the introductory training for free, but e.g. social media for business is not free. A 4h session is 75000 CFA per participant, 15 people attend.

What Oudiamora can offer to mobile training lab:

in Francophone countries more discussion is needed. Not to focus on business too much as Senegalese people don't like that

in Ghana, Kenya and Nigeria you have to focus on what you are going to gain after

Abdoulaye seems to be a good "student" for the mobile training lab

What Oudiamora needs:

financial resources

difficult to mobilize community

there is a lack of skills to translate user needs to a mobile solution, due to a lack of awareness of the potential of mobile.

target for the training lab:

technical people: methodology on how to design a mobile project

project manager: how does mobile technology help in achieving your goals

Access to market is most important. Now there is no information on what the market needs, how to create competitiveness

Interview with Antoine NGOM, Doudou Gaye Massar & Eugene Niox – GSIE & OPTIC – March 28, 2011

OPTIC is the ICT Professionals' Association of Senegal; its members are SMEs and Telcos. (approx 50-60 members)

Antoine NGOM is the President (he is also the president of the foundation behind CTIC).

The Interview had – shortly – a focus on GSIE as well:

GSIE is a SAP partner, but it's also an aggregator and author of mobile value added services.

Those services are hosted in France, as the power problem in Senegal makes it not a good environment to host it in Senegal

They work with Orange (Sonatel/Alize). Other operators in Senegal: Expresso, Tigo

Organisation:

At the moment revenue in ICT sector is 8-10% of Senegalese GDP, this mainly goes to Telco's. Objective of the association is to have this to 15% for 2015.

In order to achieve that goal, work on SMEs is necessary. **OPTIC** has identified 3 main problems that need to be addressed:

Access to Market: especially access to the projects from the public market (big, Govt programmes).

Financing: there is a need to create funds to finance the sector (no specific plans for this).This is due to lack of access to funding from banks.

R&D: need to focus on the creation of locally-relevant services and content.

Optic's main activities are:

Organisation of events and other promotion activities

the facilitation of partnerships and businesses. - Example of collaboration started through OPTIC: Currently CSU is a company – born by the aggregation of 7 smaller enterprises that have joint in a consortium and applied for the tender – setting up a new telco, for rural areas in Senegal. The tender was released by the government, then shared with all the member of Optic. 10 member organisations replied, 7 joint to make a proposal, because there was a financial investment from the companies required (and 3 didn't want to make this investment)

training, on a 'as needed' basis they organise training on specific topics such as PM, marketing management, Microsoft software.

Business model:

Subscription-based.

Receive funding from EU and other sponsors for big yearly events

What OPTIC can offer to mobile training lab:

network of SMEs and Telco's

What OPTIC needs:

market access, to access project of the government, public market

funding, as there is only a small amount of companies that can invest in mobile services

R&D, to produce service and content locally

Infrastructure is biggest need,

Training for advanced technologies.

access to platforms by operators

Interview with Daniel Annerose & Elizabeth Huttinger – Manobi – March 29, 2011

Manobi is a company that produces software and services to manage different aspects of a 'value chain' in an industry. In other words: they provide services that cover a wide variety of tasks and functions for people – e.g. - managing water supplies (metering, billing,…), or working in the agriculture sector. The aim of Manobi is to 'reduce frictions' between players in each sector they work.

Their main products are:

mWater: range of services (offered through Water & Sanitation Program) that will enable consumers and operators to improve water access to and management. The solutions (Mobile 2 Internet) optimize the performance of this value chain in both rural and urban zones including :

Participatory management of water system infrastructure

Maintenance of rural water networks

Preventive maintenance and reparation of urban water distribution

Management of usage and maintenance

Mapping the inventory and monitoring performance of water and hygiene systems

They offer the whole package: phone, service and training, as well as ongoing training

They are also enabling payment of water supplies, by relatives and acquaintances in USA, that are asked to pay for the rest of their family in Senegal. Bank payments for the moment. Paypal in the future.

mAgri: solutions for operators in agricultural value chains to reinforce their individual and collective performance and to improve their competitive ability. Functional services include:

Real-time information on agricultural prices in local and international markets

Inventory and mapping of agricultural production areas

Monitoring of agricultural production

Optimized purchase of agricultural inputs

Two-way traceability of agricultural products for export markets

Commercialization of agricultural products for local and international markets

Access to and management of agricultural credit

Organisation:

Daniel worked in Cirade for 20 years

There are 22 people employed at Manobi in Senegal. 2 people are working in Mali, 1 in France

they use PPP to achieve MDGs

they aim to create services that will increase GDP, instead of letting farmers earn 1 dollar more, they aim to let them earn 4 dollars more

every time we create jobs, to develop new businesses

simplify, also for low-literate people to access services

Business model:

in products like mWater, they offer the whole package: phone, service and training, as well as ongoing training

funding from USAID and Worldbank

let the business model (for the services) emerge from the BoP

in the long term, their aim is to have a successful set of solutions, in order to make private investment more attractive: aim to create the whole eco-system, will not gain immediate revenue.

What Manobi can offer to mobile training lab:

their approach: innovation through the value chain

they have access to platform of Orange/Sonatel; MCSP is their own infrastructure that can host 3rd party developers

bring ideas to new entrepreneurs: they would recommend not to focus on mainstream / mass-market ideas that could be purely monetisable. Focus instead on health, woman, education, cash transfer,… cutting edge (niche) innovation that will have a mass-market impact.

Some connection to the regional market

office space

What Manobi needs:

need to communicate in Ethnic languages

entrepreneurs that can make the most of MCSP

money to grow outside of Senegal

APPENDIX II – REPORT OF ACTIVITIES AND COMMUNITY INVOLVEMENT

Workshop at ESMT – March 28, 2011

Programme of workshop:

Short presentation on Design, Innovation and mobile services
"slow elevators": inspirational story
Examples Text to Change and MPesa – how they have innovated
Students' activity:
in group of 5 students, formulate a problem
presentation of problem
detail problem + create a solution
make a billboard and radio commercial
presentation of billboard and radio commercial

Attendees:

Approximately 100 ESMT students (18 groups), with mix of technology and management students

Prof Sylla, prof Onana and Jean-Marie Preira.

Lessons learnt:

translation from problem to solution is difficult, in 1.5 hours (this was expected)

Participants to the session didn't demonstrate a prior predisposition for identifying solutions / service ideas.

the room wasn't ideal for group work:

Plus:

big enough for 100 people

movable chairs

Minus:

Impossible to moderate due to noise

English/French combination was difficult: better to stick to French

involvement of professor is very good, they listened to Andrew Onana (not to us)

the students had fun

some ideas can be considered a good starting point

Presentation Mobile Senegal – March 29, 2011

Attendees:

24 people of mobile technology space, of which:

- Jean Marie Preira of ESMT
- Karim Sy of Jokkolabs
- Babakar Ngom of UCAD

Lessons learnt:

- Do presentation in slow English, goes pretty well
- Need for design skills, there is no design education in Senegal
- it is not yet a very big community at the moment

APPENDIX III – LABS' CASE STUDIES

Mobile Web Ghana

Lab/Center name	**Logo and website**
Mobile Web Ghana	http://www.mobilewebghana.org/

3-10 words summarizing the goal of the center

Training and mentorship for people who want to create a mobile startup in Ghana and other places of West Africa

Executive Summary:

- **Organization**: Organisation created by the Web Foundation, to support the project Mobile entrepreneurs in Africa. It aims at creating a generation of new entrepreneurs, by providing training, mentorship and pre-incubation support.
- **Innovation**: One of the first examples in Africa to provide training and mentorship as part of a single programme. Focuses on the variety of technologies available for producing mobile services. Also focus on business innovation and design.

Qualitative description of business model:

Date of creation: *October 2010: creation of Mobile Web Ghana*

Product / service delivered:

There is no physical lab. Virtual innovation centre.

Training: mix of tech and entrepreneurs aimed at creating groups that want to form a new business. Wide variety of technologies trained (SMS, Voice, Mobile Web, Web Apps, native apps). Also focuses on creating business and entrepreneurial skills, as well as knowledge of design principles.

Mentoring: support in the product development, customer development, general start-up nightmares

Pre-incubation: connection with angel investors, aggregators and operators for access to market. Organisation of competitions – aimed at financing start-ups.

Benefit(s) to end-user (and other actors in the chain if relevant): for start-up is a reduction of risks associated with initiating a new project. For investors is creating stronger products and highlight good case studies. For aggregators / operators, it's about providing them with potentially new revenue streams.

Customers/target groups: *developers and potential entrepreneurs based in Ghana and nearby English-speaking countries. There is no selection in terms of age or geographical provenience, but there is no positive action taken to ringfence some place for specific*

categories.

Competitive landscape:

Substitution before project: A small number of people (with 3 years of their time, and enough money to pay the school) were using MEST – Meltwater entrepreneur school. No other major substitute identified: training courses on mobile technology were rare, and informal learning started happening at mobile Monday-like event only in December.

Competition *MEST is the traditional competitor. Kofi Annan Centre for Technology is a competitor that is not focus on mobile but has demonstrated interest in the space and has already signed agreement with Mobile Mondays to organise events. Main competitor, however, is lack of interest.*

Partners involved:

- *Vodafone Group: sponsor*
- *Vodafone Ghana, sponsor for competition*
- *Ashesi University: general friendly support (informal) + help in organizing mobile events*

Technology aspects:

Technology used and installation required:

USB key for OS and software to be used during trainig. Given to all training participants (open source licenses).

No physical incubation provided. Therefore tech infrastructure reduced to bare minimum.

Technology Training given: Voice, SMS, Mobile Web and Mobile Apps, User Experience + User Interface design.

Type of application developed: at the moment, application are mainly focused on SMS, Voice and mobile web technologies. These are application for job finding, group communication, mCommerce and mPayments.

Business design:

Staff recruitment process and capacity building: 1 member of staff. Recruited through recommendations. No specifi training or extra capacity provided.

Marketing:

Ads on newspapers for training course. Appearance on TV and national news for training ourse.

Training for User research (overview) so that participants can start understanding customer needs. Customer insights wasn't an official track of the programe. Gathered info through third party researches, and shared informally with students.

Training: The training consists of three weeks of day courses. Typically a training day last from 9am to 4pm. (Sessions may be extended to evenings, on an ad-hoc basis.). The training is open to two audiences: technology specialists, and business specialists, and is split into two tracks, one for each:

Technology track: Voice, SMS, Mobile Web and Mobile Apps, User Experience + User Interface design.

Business track: business models, revenue, dealing with operators, IP issues, dealing with regulators

Competitions: *competition for the end of the year of training. 10k$ (total amount) to be won by 2 companies, who participated to the training. The competition is organized for the 30th of April.* Each team will have 15 minutes to present:

- a summary of the project in one minute

- a description of each participant's role and competencies (eg, CEO/product owner, CTO, Sales manager, Content Manager, etc.)
- a final working demo
- how the idea works from a business side
- what are the future plans, specifically what extra competencies/partnerships the team will need to develop the project further, and how it will find them.

Cost and revenue split: *Vodafone group has funded the entire programme. Students pay approx 100$ for training courses. Vodafone Ghana is supporting the competition, with 10k$ prize. No other revenues. Costs are associated so far with training preparation and delivery.*

Payment: (*end user pays – subsidized.*

Regulatory aspects: -

Monitoring and impact measurement: *course feedback. Impact on partners. # of start-ups created at the end of course,….*

Awards: not yet

Future plans and next steps: repeat training. Start pre-incubation activities.

ActivSpaces Cameroon

ActivSpaces Cameroon

http://activspaces.com

Open Collaboration for African techies

Executive Summary:

ActivSpaces is a privately financed open space for technologists, investors, tech companies and local innovators in Cameroon.

Since its founding, ActivSpaces is one of the few self-financed technology incubators in Sub-Saharan Africa. Within the next month, ActivSpaces will open a second office in Douala, making it the only community-owned African tech incubator with a presence in multiple locations.

Qualitative description of business model:

Date of creation: Pilot launched in July 2009.

Product / service delivered:

Technology business incubation, open collaboration facilities, coworking, software development for the local and international market, income generating opportunities, seed stage finance.

End-users benefit from having a springboard to take their ideas from concept to market in a short span (3-6 months) with access to finance while developing their technical capacities and business skills.

Customers/target groups: First location launched in Buea, the capital of the southwest region, to serve the local university population and nascent tech ecosystem present there. Second location launching in central Douala, the commercial capital of Cameroon with 3+ million inhabitants. The users in Douala tend to work for technology-related companies (mobile operators & multinationals) and are looking to make the jump to entrepreneurship. Buea is urban/suburban while Douala is primarily urban.

Competitive landscape:

Substitution before project *(how was the corresponding need fulfilled before, penetration, price levels, quality of solution provided).* ActivSpaces is financed by two primary areas of commercial activity: 1) technical consulting and sales of software licenses to the local market, and 2) software outsourcing projects for international clients. 10% of all invoices are allocated to finance the running costs of the space, with the remainder held by the project teams. Outsourcing opportunities were limited and initial quality of solutions was inconsistent. After the first year, overall quality of service has improved, technical capacity has increased

and a pipeline of projects exists with multiple clients.

Partners involved: *(mention what kind of support and funding at which stage – seed, round a, round b, and the conditions/terms at which the funding and/or equipment was provided)*

SMEs: Sanaga Ventures B.V., Venture Capital for Africa (vc4africa.biz); both are commercial entities based in Amsterdam, The Netherlands. The former supports ActivSpaces by performing front-end sales, oversight and management of commercial projects. The latter provides access to an online, peer-to-peer network of African entrepreneurs and investors.

MNCs: Orange Cameroon, MTN, Google, AppsTech Oracle. In talks for subsidized Internet connectivity with local operators. Google supports ActivSpaces by co-organizing networking events and providing paid project opportunities. As a strategic partner, AppsTech has agreed to provide commercial space with flexible lease terms in Douala.

CSOs: Center for Human Rights and Democracy in Africa, provides outreach in exchange for technical services.

Government: n/a

Aid agencies: Plan International, collaborated with as a local GIS/technology consultant.

Other: The AfriLabs Foundation, a network organization of SSA technology hubs, provides support in the form of shared resources, best practices and as a lobbying vehicle with external partners.

Technology aspects:

Technology used and installation required:

H*ardware, software, network used at central level, platform/franchise/*

trader/other intermediary level, and user level - Local server to host software version control systems (SVN & Git), project management, issue tracking, shared files, etc. Connectivity is via Gigabit LAN and 802.11g WiFi. Virtual Private Server (VPS) provided by Linode for externally hosted projects & applications.

Max data flow supported by whole project per day (Mbites, sms, number of calls, etc) No data.

Technology Training given: *what type of training? What type of courses? How long?* Training is primarily done via hands-on, practical work experience. Intensive short courses on web development have been given in the past. ActivSpaces members and visiting fellows deliver workshops focused on various aspects of technology, business and marketing strategies.

Type of application developed? Java (J2SE, J2EE, J2ME) , Android, .NET (C#), PHP frameworks (Kohana, Zend, Symphony), CMSs (Drupal, WordPress, Joomla), Python, Node.js, Flash, ActiveScript, Adobe Air.

Business design:

Staff recruitment process and capacity building: Almost entirely via word of mouth and online via activspaces.com.

Marketing:

Activities conducted, marketing channels and media used: Local outreach done via radio. Online marketing via social media (Facebook, Twitter, YouTube, blog, etc.).

Training: *what type of training? What type of courses? How long?* Training is informal for the moment, although courses on are in development.

Competitions: *what type of competitions?* Mostly co-organized with partners (e.g., Google Android Developer Challenge).

Cost and revenue split: *who pays for what* – 10% of all invoices are used to offset running

costs, plus an additional 5% distributed to members who participate on project-related work.

Payment: (*End-user vs Third party payment, how clients are billed and pay)* Billing terms are 30% in advance on acceptance, net due on delivery within 30 days. Nearly all payment is done via bank wire transfer (PayPal, other e-payment solutions currently not well supported in Cameroon).

End-user financing *(if any: microfinance, etc)* Seed stage venture finance (soft loans, equity and/or quasi-equity) in the range of 2.5-5 million XAF ($5-10,000) in exchange for a maximum of 20% equity for qualified startups. We have also piloted an innovative 'work for seed capital' program which uses commercial projects to provide both working capital and venture finance for startup founders.

Regulatory aspects: n/a

Monitoring and impact measurement: *Is it done and how for cost efficiency of the technology used, and for social outcomes.* Postmortems are conducted with the technical teams and client at the conclusion of every project.

Awards: Indigo Trust, a branch of the Sainsbury Family of Trusts, made a one-time award of 10,000 GBP to support the growth of ActivSpaces.

Future plans and next steps:

- AppsTech (http://www.appstech.com/about.html), an Oracle solutions provider with offices in the US and Cameroon, has offered a second ActivSpaces location in Douala, the commercial capital of the country.
- A partnership with the University of Buea has been established that will eventually link students, faculty and staff with the ActivSpaces technology incubator.
- At the start of 2011 ActivSpaces launched its Fellowship program, enabling international experts to work with the entrepreneurs. The first fellow visited in May and a second fellow is expected to arrive in June.
- A coaching and mentorship program is currently in development with the Cameroon Professional Society, based in Washington D.C.
- ActivSpaces hosted two VC4Africa meetups and actively supports the upcoming Google Cameroon Days (G-Cameroon) and BarCamp model.

The people	
Story of the organization leader Bill Zimmerman is a career software engineer who worked for companies such as Visio and Microsoft before leaving to start his own business. In 2003, he founded a popular social networking platform that enabled users to find timely, location-based restaurant reviews with a mobile phone in 20 major U.S. cities. In partnership with two operators, the content service was deployed to more than 40 million mobile subscribers. After exiting his startup, he left the Seattle area in search of new challenges, eventually arriving in Cameroon. In Buea, a university town in the southwest of Cameroon, Bill came in contact with several young entrepreneurs who were pursuing their own technology startups as an alternative to pursuing limited employment options in traditional sectors (government, parastatals, multinationals, NGOs, etc.). Most of these young people were working in isolation, either at home or at cyber cafes with outdated PCs and poor connectivity. Lacking shared resources, infrastructure and a collaborative workspace, most struggled to solve problems that had been tackled before by others elsewhere. At the same time, increasing numbers of young Cameroonians are looking to ICT entrepreneurship as a means to secure their futures. To address these acute needs of the local tech community, ActivSpaces was conceived and officially launched in 2009 with Nwiyung Valery Colong and Fua Tse, two local programmers and serial entrepreneurs who shared this vision.	**Names** Bill Zimmerman Nwiyung Valery Colong Fua Tse Ben White **What was your aha moment?** ActivSpaces is not one group's or individual's property. A strong sense of community ownership and governance combined with openness, transparency and accountability is the key to making it all work. **What are the 3 key challenges you have faced?** 1. Finding the right people & coworking model to support a collaborative tech ecosystem. 2. Acquiring the trust of international clients to create a financially sustainable project pipeline. 3. Acquiring the trust of local innovators that ActivSpaces is a place where ideas are nurtured, not stolen. **Why has your model not taken up the world yet?** There is no 'one size fits all' model for SSA technology hubs. Context matters. **What is the main policy or institutional change that would help your project grow?** Liberalization of Cameroon's telecommunications market (dominated by monopoly incumbent). **What is the main internal capacity or resource that would help your project grow?** Hiring a dedicated community manager resource to carry the ActivSpaces vision forward. **What is the top one wish you would have that would help your project grow?** Greater involvement on the part of government to foster growth & integration of ICT into public spheres.

JokkoLabs - Senegal

Lab/Center name
Jokko Labs

Logo and website http://jokkolabs.net/

3-10 words summarizing the goal of the center

Co-working space and catalyst for community creation. Helping small projects to grow, informally.

Executive Summary:

- **Organization: Jokkolabs is a newly-created co-working space in the north of Dakar, that aims at attracting and supporting small projects / companies in the digital economy, helping them to grow, thanks to the active involvement of a community.**
- **Innovation: not an incubator: takes a very informal approach, mixing co-working space, mentorship and community creation activities in one single centre.**

Qualitative description of business model:

Date of creation: *October 2010*

Product / service delivered:

Hot-desk co-working space for individuals and small companies that need temporary place where to work

Permanent desk rental: *for people and small companies that need a stable solution where to work. At the moment 7 individuals have a permanent desk.*

Consultancy and ad-hoc projects, to help companies grow their digital presence (e.g building website) and communities (e.g. supporting community creation).

Customers/target groups:

target audience is people who have small medium enterprises with strong ICT / digital component (open source projects, social technologies,…). These are mainly based in Dakar. In one case, the participant lives in a different town (St. Louis) and uses the lab as a point of reference when he's in the capital.

The number of people for the co-working space is deliberately limited to 30, until they will find a bigger space. 7 people have a permanent desk and a 5-6 people have a hot-desking, for the moment. Jokkolabs is charging 100$ per month (average) per permanent desk. Active consultancy projects are 1 or 2 at the time. At the moment:

- *a project for the 'Village des arts', to create a website of 50 artists and artisans of the village to be more open and 'social'*
- *a project for IntraHealth on community creation for health-related issues and open-source software.*

Substitution before project *To my knowledge, there are not similar initiatives in the landscape. Substitution was done by adopting different solutions: renting a small office, working at home; participating in community events; applying for incubation (although this is a very recent possibility).*

Competition *no direct competitors. Incubators (e.g. CTIC) make their money on rental and shares.*

Partners involved: *JokkoLab founders. All companies that are permanently resident in the co-working space are contributing to some (informal) extent to the success of the initiative, but there is no formal extension of partnership.*

Technology aspects:

Technology used and installation required:

Broadband connection – WiFi available for all members

Dedicated servers for permanent companies

Technology Training given: *no formal training*

Type of application developed? On an ad-hoc basis: websites and communities for clients

Business design:

Staff recruitment process and capacity building: Besides the founder, JokkoLabs has a small number of employees at the moment (1 full time and a part-time). She is in charge of communications and events. She was working with the founder prior to JokkoLabs, and is now working as a post-intern in JokkoLabs

Marketing:

Activities conducted, marketing channels and media used: all is mostly based on the creation of a solid set of communities. Most marketing activities are face-to-face meetings and participation to events, in order to spread the word about JokkoLabs and future community-based initiatives.

Approach to developing customer insights*:* participation to events, secondary research for consultancy projects.

Training: ***what type of training? What type of cursus? How long?*** **:** no formal training established yet. JokkoLabs plans to have some workshop and training on business model creation. Most of the mentoring for companies based in JokkoLabs is peer to peer, or on a ad-hoc basis.

Competitions: ***what type of competitions?*** Toughest competition comes from not understanding the value of a co-working space. Secondary competition comes from more institutional activities (e.g. CTIC incubator), which raise attention, higher capital for funding, and are slower to scale up.

Cost and revenue split: ***who pays for what****:* Cost is a relatively fixed one: rent + internet + salary. It has been kept low, as the lab is outside of the city centre. Basic income comes from fees and rental of the co-working space. Donations are a relevant part of the income (undisclosed). The rest comes from consultancy projects, done by the JokkoLabs founder.

Payment: (*End-user vs Third party payment, how clients are billed and pay)*

End-user financing *(if any: microfinance, etc):* none***.***

Regulatory aspects: none relevant

Monitoring and impact measurement: ***Is it done and how for cost efficiency of the technology used, and for social outcomes*** No formal monitoring and impact measurement.

Awards: none

Future plans and next steps: get a bigger building, to expand to more co-workers and start offering space for events. Start more in-depth mentoring. Help community of designers grow.

Train start-ups on business model, and business processes.

CTIC Dakar

Lab/Center name	Logo and website
CTIC	**http://www.cticdakar.com/**

3-10 words summarizing the goal of the center

Incubation for tech start-ups in Senegal

Executive Summary:

- **Organization: Incubator for tech start-ups. It's an initiative that focuses on the pre-incubation and incubation of ICT companies. It has got the attention and funds from many different partners and sponsors (Sonatel, Neurotech, different Government agencies, Universities, International organizations for development… full list available here: http://www.cticdakar.com/index.php/template/sponsors-a-partenaires).**
- **Innovation: first tech incubator in Senegal.**

Qualitative description of business model:

Date of creation: ***January 2011. Official launch: 19 April 2011.***

Product / service delivered:

Their work is going to be focused mainly on the Pre-incubation and incubation: supporting the enterprise creation from the proof-of-concept to the proper launch and maintenance phases. Among the activities that they plan to support:

- **Help the consolidation of the business plan for the potential companies (pre-company creation)**
- **Support product and business development**
- **Support with basic accounting services**
- **Provide basic marketing structures**
- **Support the journey to get financing**

They have a physical space, where they are hosting start-ups. In their 1st year of activity, they plan to start with 3 or 4 cases, moving to 6 and then expand to 10 – for year 2. At full capacity, they will host 30 companies, and 10 'virtual hosting'.

Customers/target groups: ***Tech start-ups in Senegal. No other specific criteria for selection.***

Competitive landscape:

Substitution before project ***to my knowledge, there are no similar solutions. These kind of activities were done in a fragmented way, or not done because too difficult to***

have a balanced source of revenues to start. .

Competition ***the only other actor that can – in some way – be compared to CTIC is the JokkoLabs creative space. Although they don't have any formal incubation aspiration***

Partners involved:

OPTIC, Organisation des Professionnels des TIC
SONATEL / France Telecom
Consortium du Service Universel
Conseil National du Patronat du Sénégal
Neurotech
Chaka Computers
Grappe TIC et Téléservices de la SCA
Banque Régionale de Solidarité
Banque Sahélo Saharienne pour l'Investissement et le Commerce
Mouvement des Entreprises du Sénégal
Confédération Nationale des Employeurs du Sénégal
Chambre de Commerce, d'Industrie et d'Agriculture de Dakar

Gouvernement
Présidence
Ministère de l'Economie et des Finances (CEPOD)
Ministère en charge des Technologies de l'Information et de la Communication
Secrétariat Permanent de la Stratégie de Croissance Accélérée
ARTP, Agence de régulation des Télécommunications et des Postes
ADIE, Agence de l'Informatique de l'Etat
APIX, Agence de Promotion des Investissements et des Grands Travaux

Enseignement supérieur
Université Cheikh Anta Diop de Dakar
Université Gaston Berger de Saint-Louis

Organismes internationaux
Infodev/IFC
Centre de Développement des Entreprises
GTZ Coopération Technique Allemande

Technology aspects:
Technology used and installation required:
Broadband connection – WiFi available for all members
Dedicated servers for permanent companies
Technology Training given: ***no formal training yet***
Type of application developed? Not revealed.

Business design:

Staff recruitment process and capacity building: consultants and mentors for businesses.

Marketing: not officially launched yet. They have a website.

Training: *no training yet*

Competitions: *no competitions so far*

Cost and revenue split: They have received 270k$ from the World Bank to kickstart. *CTIC gets a 9% share on revenues. For pre-incubation, there is a small fee.*

Payment: pre-incubates pay a fee for the monthly participation to the incubator. They start sharing revenues when they launch.

Ambition to break even in 5 years

Regulatory aspects: -

Monitoring and impact measurement: *TBD*

Awards: none

Future plans and next steps: grow at full capacity. Start trainings and additional services (TBD)

APPENDIX IV - TECHNICAL DEEP-DIVE ON THE ADVANCED LEARNING PLATFORM

Technology can be seen as a tool for training and learning, designed and targeted to various contexts, tuned to efficiently support the requirements of the services and supported by various types of systems, such as:

- Learning Management System (LMS)
- Content Management System (LCMS)

As stated in [Santos, 2003][18], a Learning Management System is a set of integrated applications designed to automate the processes of management, monitoring and registration of training events.

From the literature review we have performed, LMS can be defined as:

- "software that automates the administration of training events"[19];
- "a training management software that allows the recreation of existing spaces on the Web in classroom training, from teaching to administrative aspects"[20];
- "software that allows to monitor and control the learning process"[21].

An LCMS is a system that allows to create, store, reuse, manage and distribute learning content from a central repository of learning objects.

According to [Azevedo Maia, 2006][22], a strong point LCMS shows the possibility of combining the management capabilities of a learning management system (LMS) with the capabilities of creating and storing content from a content management system (LCMS). Thus, "LCMS serves as a base infrastructure for a solution that manages the trainee and their learning experience, reusing content whenever it is necessary, creates training programs in accordance with predefined objectives and provides interoperability between heterogeneous systems"[23].

These systems must be designed and developed by various authors according to a set of features and functionality, including:

- Repository of learning objects - a central database, where learning objects are stored and managed. From this repository, learning objects are distributed to the trainees, being used as components of the courses.

[18] Santos, A., "A normalização de conteúdos para ambientes de eLearning", Nov@Formação, nº 1, year 2, INOFOR, Lisboa, 2003

[19] https://repositorium.sdum.uminho.pt/bitstream/1822/8073/1/artigo-senda.pdf)

[20] Lagarto, J., "Ensino a distância e formação contínua. Uma análise prospectiva sobre a utilização do ensino a distância na formação profissional contínua de activos em Portugal", INOFOR, Lisboa, 2002

[21] Figueira. M. and Denominato, R., "Guia para a Concepção de Conteúdos de eLearning", Lisboa: INOFOR. Colecção Formação a Distância & eLearning, 2006

[22] http://repositorio.up.pt/aberto/bitstream/10216/11539/2/Texto%20integral.pdf

[23] Bernardo, H. and Bielawsky, L., "O eLearning empresarial enquanto futuro da formação on-line e do desenvolvimento de carreira. O Futuro do e-Learning", Sociedade Portuguesa de Inovação, Principia, Publicações Universitárias e Científicas, Lda, 1ª Edição, 2003

- Tools (Software) Copyright - An application that allows the creation of learning objects in an intuitive way, providing the authors templates and storyboarding capabilities that incorporate principles of instructional design.
- Interface for dynamic distribution - a feature that allows distribution of content to the learner and that includes tracking throughout the learning process and an intuitive interface easy to use.
- Management interface (application management) - An application that allows to manage the trainees access, the creation of courses from a catalog of learning objects, assessment of trainees' progress and integration with the LMS.

In [Chapman, 2001][24] it is presented the so-called Anatomy of an LCMS and it is defended that these systems should be developed to "manage the production, storage, reuse and delivery of eLearning content to a central object repository - everything from design to delivery" [Azevedo Maia, 2006][25], as illustrated in figure 1:

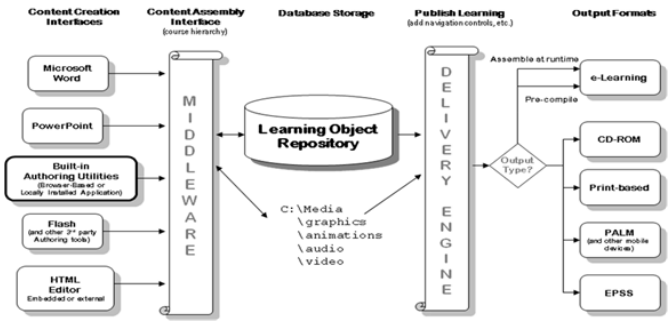


Figure 13: Anatomy of an LCMS

In [Nichani, 2001][26] it is presented a scheme of operation of an LCMS and defined the following steps in the production of LO in this context:

- The creators make new Reusable Learning Objects (RLO) on the topics that are needed or new courses, by combining existing RLOs.
- The editors analyze the RLOs and decide putting, or not, the RLOs available to trainees and trainers.
- The RLOs are introduced in courses and published in the LCMS, and editing for later access or use.

In [Pimenta and Baptista, 2004][27] it is considered the LCMS as systems that seeks to:

- Facilitate and guide the user / author to comply with general principles of eLearning content production (organization, navigation, design, resources), according to the principles of "instructional design".

[24] http://www.internettime.com/Learning/lcms/bryan_LCMS.ppt

[25] http://repositorio.up.pt/aberto/bitstream/10216/11539/2/Texto%20integral.pdf

[26] http://www.elearningpost.com/articles/archives/lcms_lms_cms_rlos

[27] Pimenta, P. and Baptista, A., “Das plataformas de e-Learning aos objectos de aprendizagem” , Dias & Gomes (Eds), e-Learning para e-Formadores, 2004

- Provide the utmost flexibility in its final form for the provision of content, particularly as regards the type of device or medium that will be available

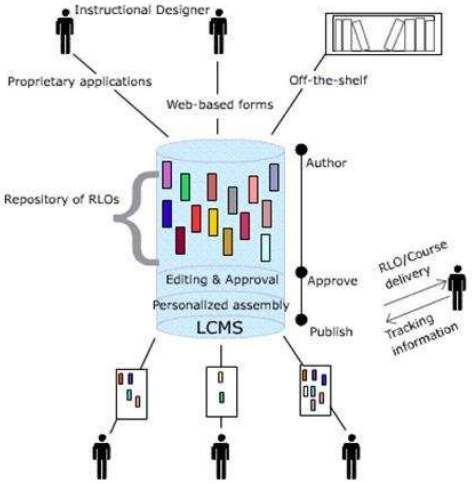


Figure 14: Functional diagram of an LCMS

In organizations today, it begins to emerge a need for quick access to knowledge, supported by LO and managed by LMS and LCMS, from fixed or mobile terminals. There is currently a growing market demand of this type of SW, which highlights the importance of technology as a means available to the service education and training. It is expected that these scenarios present a major trend of rapid growth in the near future, supported by Learning Objects portals, easily accessible and pedagogically oriented to address the training needs of the people.

But according to [Pimenta and Baptista,2004] an LCMS can "require a great deal of foresight, planning and ability to design effective learning objects, even when there are available templates and examples. Designers must think in a nonlinear way and have a good understanding of all the contexts in which objects may be needed or used. For example, if a learning object is taken out of context or presented with insufficient supporting information, may have adverse results. "

But the evolution and convergence of technology, especially the development of broadband connections (fixed and mobile), will likely to bring out new services, new platforms (LMS and LCMS), new technologies and new ways to use them for educational purposes, being expectable an amazing development in terms of knowledge management, learning objects, mobility and computational intelligence.