FREE TECHNOLOGY ACADEMY

Final Report   Public Part

Project information

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Executive Summary

This Final Report provides an overview of the Free Technology Academy (FTA), funded under the Lifelong Learning Programme of the Education, Audiovisual & Culture Executive Agency of the European Commission. It is aimed at the general public and more specifically to individuals and organisations with an interest in the incorporation of Free Technologies to the curricula of European Higher Education Institutions; the state-of-the-art technologies and methodologies for computer assisted distance learning based on Free Technologies; and the use and production of Open Educational Resources.

The initial motivation of the FTA was the need for high quality training opportunities in the area of Free Technologies, especially for professionals with limited time available and unable to join traditional courses. The main accomplishments of the FTA are:

1. The implementation of a modern and stable Virtual Campus fully based on Free Software applications. The installation, configuration and administration of this system were fully documented in order to guarantee the transfer of technology and related knowledge to all FTA partners and to any other interested party.

2. The production of high quality educational materials for eight different modules, compliant with the Shareable Content Object Reference Model (SCORM) standard. All educational materials used in the FTA are true Open Educational Resources: all materials can be used for any purpose, adapted and distributed without restrictions. In addition, two Guest Lectures have been created.

3. Learning outcomes per module have been defined and supplemented by references to internationally recognized frameworks for classifying both competences and knowledge areas. Quality Assurance procedures have been put in place, evaluated and assessed. A Scientific Council has been established with recognised international specialists to oversee the Quality Assurance procedures. Bilateral agreements with the academic partners for the mutual recognition of certifications have been been signed.

4. An Exploitation Plan has been developed, formulating the common goals of sharing resources and concentrating efforts. The FTA Educational Programme started with a pilot to test the FTA Campus, the course modules and materials, the learning methodology and learner experience and the feasibility of the exploitation plans. The number of learners enroled exceeded the expectations and the level of satisfaction of learners was high. The Pilot Programme was the first step towards a sustainable model for the FTA.

5. A dissemination strategy has been implemented, including the creation of a visual identity, a website and promotional materials; the publication of regular announcements, blog posts and articles; and presentations in conferences and workshops. The FTA Associate Partner Network, a network of organisations sharing a common interest in offering certain courses in the area of Free Technology, has been set up to communicate and attract new groups of learners.

The Free Technology Academy was envisioned from its inception as a sustainable effort that would continue after the lifetime of the project. Three of the four FTA Consortium Partners have decided to continue in the FTA Board, while the fourth will continue as an Associate Partner. At the time of writing, the first term of 2011 has started and a total of 24 courses are planned for this year. In the meantime, the FTA Associate Partner Network is steadily growing, giving the FTA access to direct target groups. And finally, some of the FTA Consortium partners and Associate Partners are working on a new proposal to set up a full Master Programme on Free Technology. The FTA is a fundamental building block for this new joint effort.

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1. Project Objectives

The Free Technology Academy has set up a distance learning programme for improving knowledge and skills on Free Software and Open Standards (FS and OS), which are referred together as Free Technologies. With this purpose the expertise of the Universitat Oberta de Catalunya[1] (UOC) in terms of virtual campus technology, educational materials and methodology is transferred and adapted at the European level with particular emphasis on lifelong learning of IT professionals, educators and decision makers.

The main goals of the FTA are twofold. First, to set up a virtual campus offering course modules on FS and OS with teaching staff from the participating institutions; and second, to become a showcase of a virtual campus based on FS and OS that makes use of Open Educational Resources, in order to promote its use in other institutions.

The concrete objectives of the FTA are:

1. To adapt and transfer a) the University Campus technology[2] (financed by the Catalan and Spanish governments), b) the distance learning methodology and c) the modules of UOC's Master Programme on FS and OS as Open Educational Resources.

2. To run a virtual campus at European level offering high quality course modules on FS and OS.

3. To create a network of HE institutions, vocational education and training organisations, companies and civil society organisations involved in the FTA programme.

4. To facilitate the internationalisation and use of the University Campus technology and the UOC's open educational resources and learning methodology by European universities and other educational institutions.

5. To contribute to the building of a critical mass of FS and OS users.

Free Software, also known as libre software or open source software, allows the source code of computer programs to be used freely, which means that the program can be used, copied, studied, modified and redistributed without restrictions. Free Software, as opposed to proprietary software, offers the freedom to learn and to teach without engaging in dependencies on any single technology provider. This freedom of choice is considered a basic condition for an autonomous member of the information society.

The expansion of Free Software has brought together a continually growing global community of developers, by offering solid quality products that have not gone unnoticed in business, government and academic circles. Big players in the IT industry such as Novell, IBM and Sun Microsystems have brought Free Software into their business models, and many more SMEs provide professional services around these technologies. The European Commission and many national, regional and local governments have started adopting Open Standards and show a preference for Free Software to cover their IT needs.

Despite the increasing demand, one of the main obstacles for the consolidation of FS and OS is the knowledge and skill level of IT professionals, educators and decision makers. Despite the crucial role these technologies play, the aforementioned groups often lack the necessary knowledge. Moreover, their possibilities to study, both in terms of time and mobility, are limited, since conventional educational programmes are not tailored for them. This is precisely the gap that the FTA aims to address by setting up a distance learning programme.

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1 http://uoc.edu

2 http://www.campusproject.org

2. Project Approach

The work of the FTA Consortium was divided into several areas that correspond to different teams within the project.

2.1. Project Management

The project management included a) coordination of the project according to the project plan; b) overall legal, contractual, financial and administrative management; c) development and maintenance of any Consortium agreement.

The project partners constituted a Consortium Board to oversee the overall strategy. Project management was performed by the Executive Committee and specific tasks were carried out within different teams. The Scientific Council reviewed and gave advice on the educational programme. Finally, interested parties were invited to participate in the Associate Network Board (see Figure 1).
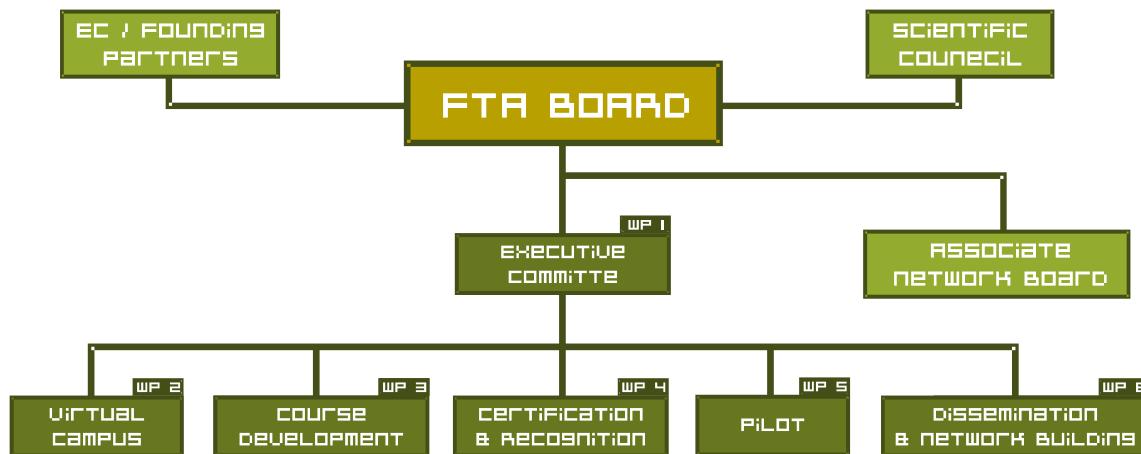
Figure 1: Organisation of the FTA

The FTA Board consisted of 2 delegates per consortium partner. In the FTA Board the main strategic issues of the project were discussed. The Board met physically once every six months and once every three months on-line, on average.

The team leaders took part in the Executive Committee, which was chaired by the project coordinator and ran the daily operation of the project. The ExeCom met on-line every three weeks. The team leaders reported their progress and main issues and plans were discussed during these meetings, but also through the mailinglist and the project wiki. The teams themselves met whenever required for the progress of the tasks they had assigned.

The Scientific Council advised and reviewed the educational programme of the FTA.

The Associate Network Board offered a framework for cooperation to strengthen the FTA and education in Free Software and Open Standards in general.

2.2. Virtual Campus

The University Campus is a solution designed for virtual learning that includes the common functions of an LMS, but which also offers tools that can be executed and integrated into

Free Software Learning Platforms like Moodle[3] or Sakai[4], bringing added value to the functionality offered by such platforms.

The University Campus solution was set up and adapted to create the FTA Campus. After considering the advantages and disadvantages of Moodle and Sakai, the former was selected as the base for the FTA Campus. A set of additional tools that can't be found in Moodle has been added to the Campus thanks to the modularity of the University Campus technology.

2.3. Course Development

Most of the FTA modules were derived from the materials of the UOC's Masters Programme in Free Software[5], while others were newly developed. The SELF Platform[6] and other free software applications were used for the creation of the SCORM-compliant modules and for their continuous improvement during and after the funded period.

2.4. Certification and Recognition

In the area of certification and recognition, the purpose of the FTA was to set up the procedures needed to ensure that the qualifications and learning outcomes offered by the FTA are recognised by all participating universities. This enabled FTA learners to get a certificate for the FTA modules they completed and have that certificate (and the corresponding number of ECTS) recognised in case of continuing a complete cycle of studies at one of the partner universities.
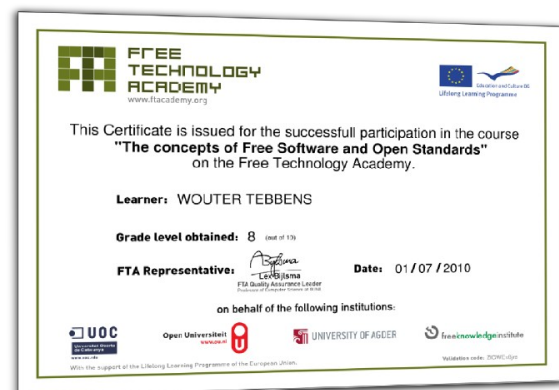
This implied a set of concrete activities: a) to involve the university partners in the definition of the learning outcomes, the educational modules and the evaluation methodology; and b) to sign bilateral agreements with academic partners for the mutual recognition of certifications.

Moreover, a Scientific Council was established to advise and review the educational programme of the FTA by overseeing QA procedures in relation to the curricula, faculty competences, student performance, learning facilities and outcomes assessment.

2.5. Pilot Programme & Exploitation Plan

A pilot programme was developed and conducted using the previous results of the project. The main objectives of the pilot were to set-up, run and evaluate an initial set of educational modules on the FTA virtual campus and determine the feasibility of the exploitation strategy. Between 30 and 70 enrolments were expected in the pilot.

The Exploitation Plan contains the description of the implementation plan of the Free Technology Academy. It formulates the common goals of sharing resources and concentrating efforts to make the Academy successful and add to the building of a critical

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3   http://www.moodle.org

4   http://www.sakaiproject.org

5   http://www.uoc.edu/studies/mof/free_software/oficiales/master_oficial_software_libre/master_oficial_software_libre_plan.htm

6   http://beta.selfplatform.eu

mass of experienced and skilled professionals, teachers and decision makers in the area of Free Software and Open Standards.

Due to the collaboration in the context of the FTA, partners add to these goals, while each of them invests only a fraction of the resources needed to implement the whole programme. The investments were shared and so were the benefits. Partners added resources for conducting the course programme and shared the development costs of additional courses, quality assurance and international recognition.

In order to make a long term and sustainable effort out of the FTA, organisational aspects, economical aspects and concrete plans for the coming period have been agreed upon between the consortium partners. The Exploitation Plan forms the basis for this agreement.

2.6. Dissemination & Network Building

As an educational project, the FTA needed a visual identity strategy, a uniform use of visual resources to create a strong image. In agreement with the main guidelines of the project, all communication resources are freely available, well advertised and accessible. This includes the design of the FTA Campus and the integration of other web tools, as well as the creation of printed and multimedia materials.

One of the main objectives of the communication strategy was attracting learners to the FTA and creating an infrastructure and communication strategy that allows learners already studying at the FTA to "spread the word" (comment, recommend, share experiences) about the FTA in their own network of contacts.

The FTA Consortium expanded its associate partner network during the life of the project. This helped disseminate the results of the project and attract new learners to the FTA.

The FTA attracted learners from several differentiated groups. During the pilot, most of these users were expected to come from the three countries present in the consortium. The main target groups during the life of the project were:

- **IT professionals**: systems engineers, software developers and IT managers who need to update their skills on specific areas of knowledge related to Free Software and Open Standards. It is expected that the need for these skills will increase noticeably in Europe in the coming years, due to the growing adoption of these technologies both in the public and private sectors.

- **Educators**: as the demand for IT professionals with the aforementioned skills grows, educational institutions will be compelled to include these skills in their learning trajectories. Many educators will need training in specific areas to be able to transfer that knowledge to their students.

- **Decision makers**: the use of Free Software and Open Standards has become the topic of many local, regional, national and European policies. Decision makers at all levels will need to develop competences in the main features and implications of these technologies.

- **IT students**: until educational institutions have adapted their curricula to the needs of the market concerning Free Software and Open Standards, many IT students have to find this specific training outside their regular studies.

Special attention was given to those sectors where an increasing demand for the skills covered by the FTA modules is expected in the coming years. For example, where the implementation of Free Software and Open Standards is considered a strategic goal for the public sector on the national or regional level.

In the long term, the FTA aimed for two different sets of targets:

- The initial targets - IT professionals, decision makers, IT students and educators, in all European countries and outside Europe.

    In the last few years, many European countries have passed motions, recommendations and laws supporting the use of Free Software and Open Standards in public bodies. Some of the most relevant examples of this trend include the regional government of Extremadura (Spain)[7] and the recently approved Action Plan in the Netherlands[8]. The increasing number of European governments moving in this direction demonstrates that the demand for specific training in this area will increase significantly in the coming years.

- HE institutions, schools, training companies, IT companies, public bodies or any other organisation interested in a distance learning programme on Free Software and Open Standards, or in the technology developed and used in the FTA.

The Consortium transfered the expertise acquired in the initial phase through collaboration programmes, specially within the FTA Associate Network. This expertise includes the technology behind the virtual campus, the adopted methodology for distance learning and the content of the courses themselves. Besides, the FTA Associate Partner Network helps co-developing and exploiting the developed resources.

The FTA positions itself at the forefront of the movement towards an inclusive, sustainable, free and open knowledge society.

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7   http://www.linex.org

8   http://www.noiv.nl/about_ososs

3.   Project Outcomes & Results
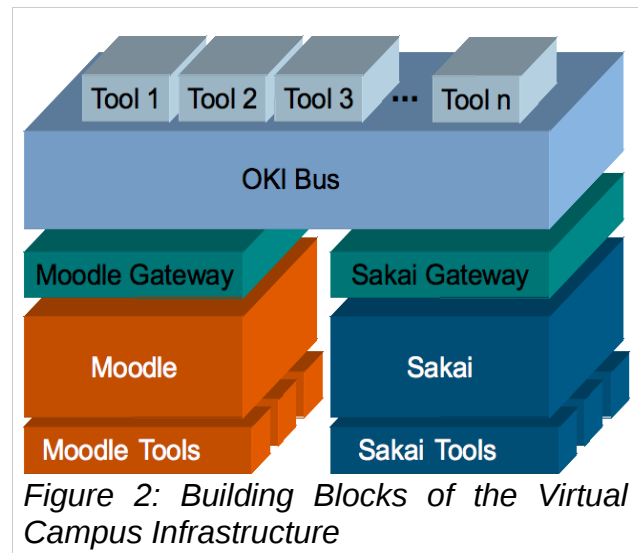
3.1. Virtual Campus

The objective in this area was to set up and maintain a complete virtual campus. This campus is a multi-platform environment, standard-compliant and fully based on Free Software, allowing others to replicate, reuse, adapt and support it with no licensing costs. Hereby, sustainability and the transfer of the technology and expertise to all present and future partners is guaranteed.

The base for the FTA campus is the University Campus project, a complete virtual campus developed by a consortium of Catalan universities in cooperation with the MIT and published under the GPL license[9]. The University Campus source code and distributions are available in the project's website[10]. The Catalan government and the participating universities have already invested 3 million Euro on the development of this technology.

The main reasons for choosing the University Campus as the platform for the FTA Campus were:

Figure 2: Building Blocks of the Virtual Campus Infrastructure

1. it is highly modular;

2. it builds upon either Sakai or Moodle, the most widespread Free Software LMSs;

3. it has an interoperable layer to integrate other modules; and

4. it already has a solid development team working on it, led by one of the members of the FTA Consortium.

The FTA campus satisfies all basic needs for distance learning, including virtual classrooms, forums, chat, messaging, question banks and audio/video content. It can use learning materials stored in the SCORM[11] open standard format, allowing for the exchange of Open Educational Resources (OER) with a great number of sources.

The development of the FTA campus was divided into two phases. The first phase focussed on the definition and implementation of the Virtual Campus, including: definition of the exact architecture of the system; selection of the specific modules to be used in the pilot courses; adaptation of the default UI templates; testing and implementation of the FTA virtual campus. The second phase consisted of knowledge transfer to the FTA Consortium and maintenance and improvement of the platform during the pilot.

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9   http://gnu.org/gpl.html

10 http://www.campusproject.org/

11 http://en.wikipedia.org/w/index.php?title=Sharable_Content_Object_Reference_Model&oldid=413003108

At the end of the reporting period, two main outcomes are presented:

1. The FTA Virtual Campus: A working virtual campus based on Free Software. It includes a subset of the modules developed within the Campus Project, adapted to the needs of the FTA. All new code developed in the FTA was contributed back to the Campus Project. The installation, configuration and administration of this system were fully documented in order to guarantee the transfer of technology and related knowledge to all FTA partners and to any other interested party.

2. FTA Virtual Campus Technical Report: A document describing 1) the architecture of the campus, its modules and features, and installation instructions; 2) an evaluation of the technical aspects and performance of running the campus for the pilot (WP5); and 3) recommendations for improvement.

3.2. Course Development

3.2.1. Materials

As course development is concerned, the FTA produced high quality educational materials for eight different modules. These learning materials have not been developed as simple text guides to be used by self-taught students. Instead, real distance education courses were created, compliant with the Shareable Content Object Reference Model (SCORM) standard. This makes it possible to use these courses directly in the FTA campus structure, which is SCORM-compatible via its Moodle (or Sakai) tools, or in any other LMS with SCORM support.

In addition, all educational materials used in the FTA are true Open Educational Resources as defined in the licensing policy of the SELF Platform[12]. That means that all materials can be used for any purpose, adapted and distributed without restrictions. They are published under either the GNU Free Documentation License (GFDL) or the Creative Commons Attribution – Share Alike license (CC-by-sa), enabling other institutions or self-taught learners to use them even if they are not linked to the FTA community.

Some of the materials were already (partially) available in Catalan and Spanish and are in use in the UOC's Master Degree on Free Software. These materials have been updated and translated into English. Others have been newly developed.

The following materials are published on the FTA Website[13]:

1. "Introduction to Free Software"[14] - Authors: Jesús M. González-Barahona, Joaquín Seoane Pascual, Gregorio Robles / Coordinators: Jordi Mas Hernández, David Megías Jiménez

   Part of Module 1: "The concepts of Free Software and Open Standards"[15]

2. "GNU/Linux Advanced Administration"[16] - Authors: Remo Suppi Boldrito, Josep Jorba Esteve / Coordinator: Josep Jorba Esteve

   Part of Module 2: "The GNU/Linux Operating System"[17]

3. "Open Networks"[18] - Author: Enric Peig Olivé

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12 http://www.selfplatform.eu/

13 http://ftacademy.org/materials

14 http://ftacademy.org/materials/fsm/1#1

15 http://ftacademy.org/courses/modules/1

16 http://ftacademy.org/materials/fsm/2#1

17 http://ftacademy.org/courses/modules/2

18 http://ftacademy.org/materials/fsm/3#1

This material is part of Module 3: "Network Technologies"[19]

4. "Introduction to Web applications development"[20] - Author: Carles Mateu / Coordinator: Jordi Mas Hernández

   Part of Module 4: "Web applications development"[21]

5. "Economic aspects and business models of Free Software"[22] - Authors: Amadeu Albós Raya, Lluís Bru Martínez and Irene Fernández Monsalve / Coordinator: David Megías Jiménez

   Part of Module 5: "Economic aspects of Free Software"[23]

6. "Legal Aspects of the Information Society"[24] - Author: Malcolm Bain / Contributions: Manuel Gallego, Manuel Martínez Ribas, Judit Rius

   Part of Module 6: "Legal aspects of the Information Society"[25]

7. "Introduction to Software development"[26] - Authors: J. Pérez López and L. Ribas i Xirgo / Coordinators: Jordi Mas Hernández and David Megías Jiménez

   Part of Module 7: "Software development"[27]

8. "Implementation of Free Software Systems"[28] - Authors: Amadeu Albós Raya, Óscar David Sánchez Jiménez / Coordinator: David Megías Jiménez

   Part of Module 8: "Deployment of Free Software and Case Studies"[29]

Out of scope for the period cofinanced by the European Commission, but also developed and freely available, are two extra course materials:

9. "GNU/Linux Basic"[30] - Authors: Joaquín López Sánchez-Montañés, Sofia Belles Ramos, Roger Baig Viñas, Francesc Aulí Llinàs / Coordinators:Jordi Serra i Ruiz, David Megías Jiménez, Jordi Mas

   Part of the module "GNU/Linux Basic"[31]

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19 http://ftacademy.org/courses/modules/3

20 http://ftacademy.org/materials/fsm/4#1

21 http://ftacademy.org/courses/modules/4

22 http://ftacademy.org/materials/fsm/5#1

23 http://ftacademy.org/courses/modules/5

24 http://ftacademy.org/materials/fsm/6#1

25 http://ftacademy.org/courses/modules/6

26 http://ftacademy.org/materials/fsm/7#1

27 http://ftacademy.org/courses/modules/7

28 http://ftacademy.org/materials/fsm/8#1

29 http://ftacademy.org/courses/modules/8

30 http://ftacademy.org/materials/fsm/13#1

31 http://ftacademy.org/courses/modules/13

10. "Tools and utilities in free software"[32] - Author: Jesús Corrius i Llavina / Coordinators: David Megías Jiménez, Jordi Mas, Ana-Elena Guerrero

Part of the module "Free Software Tools and Utilities"[33]

The materials have all been exported to SCORM using the SELF Platform and other free software tools such as Atutor, eXe or Reload, or a specific tool developed by the Universitat Oberta de Catalunya. In fact, a complete set of conversion tools have been developed to generate SCORM and PDF outputs from DocBook inputs. As a consequence, all materials are available in PDF format as well as in DocBook format: a semantic markup language for technical documentation. DocBook enables users to create documents in a presentation-neutral form that captures the logical structure of the content, which can then be published in a variety of formats, including HTML, XHTML, EPUB, PDF, man pages, and others - without requiring users to make any changes to the source.

3.2.2. Guest lectures

John Hall[34]

John Hall is the Executive Director of Linux International, a non-profit organization of computer vendors who wish to support and promote Linux-based operating systems. The nickname "maddog" was given to him by his students at Hartford State Technical College, where he was the Department Head of Computer Science. He now prefers to be called by this name. According to Hall, his nickname "came from a time when I had less control over my temper".

Photo by hesenrre (cc by)

Benjamin Mako Hill[35]
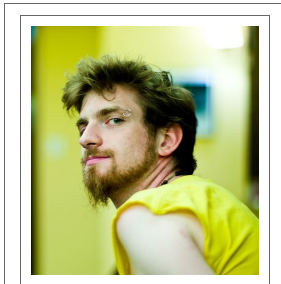
Photo by Joi Ito (cc by sa)

Benjamin Mako Hill is a Debian GNU/Linux programmer, intellectual property researcher, activist and author. He is a free software developer and contributes to the Debian and Ubuntu projects. He is also the author of two best-selling technical books on the subject. He currently serves as a member of the Free Software Foundation board of directors and of Wikimedia Foundation's board. Hill has a Masters degree from the MIT Media Lab and is currently a Senior Researcher at the MIT Sloan School of Management where he studies free software communities and business models.

3.3. Certification & Recognition

For learners, joining an international programme like the one provided by the FTA has several advantages. They participate in an advanced course programme on Free Software and Open Standards, through a state of the art virtual campus with completely free educational materials (Open Educational Resources), which allow the use, personalisation and reuse outside of the FTA. Learners participate in virtual classrooms guided by skilled professionals and receive guest lectures from recognised international experts. The distance learning approach allows learners to fit their studies in their daily working life, while the international approach allows to bring together the best professionals on each area and

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32 http://ftacademy.org/materials/fsm/10#1

33 http://ftacademy.org/courses/modules/10

34 http://en.wikipedia.org/wiki/Jon_Hall_%28programmer%29

35 http://en.wikipedia.org/wiki/Benjamin_Mako_Hill

exchange experiences between learners and lecturers from different countries and sectors. After each course the learner can obtain an FTA certificate, while complete official degrees can be obtained at one of the participating universities.

3.3.1. Learning Outcomes

Descriptions of the learning outcomes were already available for several of the courses from the UOC Master Programme, and these have been updated and translated. However, it was decided that, for the purpose of disambiguation and comparability, these descriptions should be supplemented by references to internationally recognized frameworks for classifying both competences and knowledge areas.

In order to give a standardized description of competences, the European eCompetence Framework[36] was selected. This is a European wide reference framework of information and communication technologies competences that can be used and understood by ICT professionals and human resources managers from ICT user and supply companies, small and medium sized enterprises, the public sector, as well as educational and social partners across the European Union. The framework has been developed by a large number of European ICT and human resources experts in the context of the CEN/ISS Workshop on ICT Skills. It was first presented at the European e-Skills Conference on 9-10 October 2008 in Thessaloniki.

For classifying knowledge areas, the 1998 ACM Computing Classification System[37] was employed. ACM is the world's largest educational and scientific computing society, and aims to deliver resources that advance computing as a science and a profession. The CCS is the basis for classifying all documents in the ACM Guide to Computing Literature; various other organisations use it officially and unofficially to classify literature, reviewers, and so forth.

The learning outcomes were initially prepared prior to the pilot runs. They were then based on experiences in the UOC Master Programme and on the contents of the learning materials used in the various courses. These sources were sufficient for finding the category in the e-Competence framework the courses belong to, but not in all cases the level of expertise attained. An estimate of this was made on the basis of the results of exercises and assignments provided in the actual course runs; in future it will be the task of the Scientific Council, in judging the results of evaluations and assessments, to determine whether the intended level of expertise is actually attained in practice. The learning outcomes provided by the FTA are periodically re-evaluated in view of Scientific Council recommendations.

The learning outcomes per module, with a description of compentences, knowledge, the European e-Competence framework and the ACM Computing Classification System can be found on the website of the FTA[38].

3.3.2. Quality Assurance

The Quality Assurance Plan of the FTA monitors and improves the quality of the educational programme consisting of various modules. The Quality Assurance is concerned with both the quality of the educational processes, the supporting processes and the quality of the educational products. It is a permanent process that is incorporated in the management cycle of the educational programme.

The interpretation of Quality Assurance within the FTA[39]:

> "a set of predetermined systematic actions applicable within the framework of quality assurance with the purpose of ensuring that the producers or final users get a

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36 http://www.ecompetences.eu

37 http://www.acm.org/about/class/1998

38 http://ftacademy.org/courses/modules/

39 http://www.unizg.hr/tempusprojects/glossary.htm

> standard quality product or service. It consists of separate yet connected activities: quality control and quality assessment"

For quality planning the interpretation would be:

> "actions which determine the goals and demands for quality as well as for the application of elements of quality systems"

A document describing QA procedures has been written based on existing OUNL procedures, incorporating a complete PDCA cycle.

The FTA Board has established a joint Scientific Council[40] with recognised international specialists to oversee QA procedures in relation to: the curricula and learning materials-, learner performance, tutors, learning facilities and outcomes of assessment. Quality aspects are assessed and improved before, during and after each run of a course or a complete programme. The Scientific council is asked periodically to give its opinion on each of the aspects: 1) the curriculum; 2) the products from module production; and 3) QA reports for the management consisting of the reports about the opinions of students and teachers about module delivery, module support and assessment. The opinions of the learners with respect to the module are gathered using questionnaires after each run. Also the logs of the Electronic Learning Environment are collected and analysed to get an impression of how the learning environment is used in practice. The teachers active in a run fill in a specific questionnaire to express there opinion about the module and the study process. All the questionnaires are combined and presented to the team of teachers who then can comment the various results and can propose improvements to the study content, the desired learning outcomes and all aspects of the study processes. The team of teachers are stimulated to use peer reviews to improve there personal skills and attitudes in supporting the learning processes. These evaluations are then combined in a report for the run of the module and presented to the FTA Board. Decisions about the curriculum are then based on these evaluation reports and general opinions about market perspectives, interests from educational institutions etc. The reports are also made available in the learning environments. Care is taken to protect the participating staff by limiting the personal information in the reports; so judgments about individual persons are removed from the reports that are presented to the learners.

The different aspects of the FTA activities undergo extensive quality reviews and quality procedures are built into the various processes and are regularly reviewed by the Quality Assurance team.

3.3.3. Scientific Council

The Scientific Council is an advisory commission to the Board of the FTA. The council meets virtually and asynchronously. The number of members of council is 7 plus or minus 1. The members have been recruited worldwide, not just from participating countries. The members of the Council have accepted their role after careful selection by the FTA Board and are as follows:

- Susan D'Antoni (Canada)

- Nagarjuna G. (HBCSE, FSF India, India)

- Jesús M. González Barahona (URJC, LibreSoft, Spain)

- Rob Koper (OUNL, The Netherlands)

- Ronaldo Lemos (Fundación Getulio Vargas, Brazil)

- Anne Østergaard (Denmark)

- Elizabeth Stark (Yale, iCommons, USA)

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40 http://ftacademy.org/about/sc

Their biographies can be found on the FTA Website[41].

After the LLP-funded period the Scientific Council continues its activities as an advisory council to the institutions that form the Free technology Academy. The council then will meet once a year to look back at results with respect to the goals of the Free Technology Academy and will give advice on future activities and projects that could support the goals.

3.3.4. Recognition

Bilateral agreements with the academic partners for the mutual recognition of certifications have been been signed.

Recognition of FTA modules in the UOC's Master's degree in free software

The modules taken at the Free Technology Academy are eligible for recognition in the Master's degree in free software offered by the UOC as shown in the following table:

FTA Module	UOC's Master's degree in free software
The concepts of Free Software and Open Standards	Introduction to free software (5 ECTS)
The GNU/Linux Operating System	Administration of the GNU/Linux operating system (5 ECTS)
Web applications development	Web applications development (5 ECTS)
Economic models	Economic aspects and business models of free software (5 ECTS)
Software development	Introduction to software development (5 ECTS)
Legal aspects of the Information Society	Legal aspects and exploitation of free software (5 ECTS)
Network Technologies	Computer networks (5 ECTS)
Case Studies	Implementation of free software systems (5 ECTS)

The recognition of these FTA modules will be subject to the payment of the fees required for the incorporation of the modules into the student transcript at the UOC. The cost of this recognition is the 9% of the credit price, in accordance with the criteria set forth in the Regulations governing transfer and acknowledgement of UOC credits. This percentage is subject to the possible variations of the UOC's price policy in the future.

In any case, the FTA students who want to enrol the UOC's Master's degree in free software must fulfil the admission conditions required by the University conforming to the Spanish regulations and laws as detailed in the admission procedures.

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41 http://ftacademy.org/about/sc

These subjects will be incorporated into the student's transcript with the UOC grade scale which is equivalent to the FTA grade as shown in the following table:

FTA Scale	UOC Scale	Rating
9,10	A	Very good rating
7,8	B	Good rating
6	C+	Satisfactory rating
4,5	C-	Low rating
1,2,3	D	Very low rating
N	N	Not rated

Only subjects graded with 6 or higher are subject to be recognized by the UOC.

Recognition of FTA modules at Open Universiteit

- Since the examination procedures for FTA modules form an integral part of the course, it is not possible to obtain credit for these modules in any other way than by participating in the course.

- FTA modules may demand prerequisites that are not automatically fulfilled for every OU student. It is the student's responsibility, when registering for an FTA course, to check that he or she satisfies the prerequisites.

- For students in the OU master programme Computer Science, at most two FTA certificates will be recognized within the general electives area ("gebonden keuzeruimte algemeen").

- For students in the OU bachelor programme Informatica, at most five FTA modules will be recognized within the free choice area ("vrije ruimte").

- In all cases, the general rules for external modules ("aanschuifonderwijs") as stated in the Education Rules ("Onderwijs- en Examenregeling") apply.

- To obtain recognition, students should contact the Faculty Examinations Committee ("Facultaire Toetsingscommissie").

- The grading system adopted by the FTA is identical to the one in use at OU; therefore no conversion of grades is necessary.

Recognition of FTA modules at UIA

The following courses are recognized as electives in the graduate programme of Information Systems at UIA:

- The concepts of Free Software and Open Standards

- Economic aspects of Free Software

- Legal aspects of the Information Society

For students in the UiA bachelor programme in IT and Information Systems, at most six FTA modules will be recognized within the IS/ICT part of the elective area.

These modules will be incorporated into the student's transcript with the UIA grade scale which is equivalent to the FTA grade as shown in the following table:

FTA Scale	UIA Scale	Rating
9,10	A	Outstanding
7,8	B	Very good
6	C	Good
5	D	Fairly good
4	E	Sufficient
1,2,3	F	Fail
N	N	Not rated

Only subjects graded with 4 or higher are subject to be recognized by UIA.

Since the examination procedures for FTA modules form an integral part of the course, it is not possible to obtain credit for these modules in any other way than by participating in the course.

FTA modules may demand prerequisites that are not automatically fulfilled for every UIA student. It is the student's responsibility, when registering for an FTA course, to check that he or she satisfies the prerequisites.

3.4. Pilot Programme & Exploitation Plan

During the first year of the FTA the Exploitation Plan has been developed. The Exploitation Plan contains the description of the implementation plan of the Free Technology Academy. It formulates the common goals of sharing resources and concentrating efforts to make the Academy successful and contribute to the building of a critical mass of experienced and skilled professionals, teachers and decision makers in the area of Free Software and Open Standards.

The Exploitation Plan defines a) the exact educational programme including courses, learning materials, schedules, lecturers and guest lecturers from the FTA network, coaches and exams; b) a detailed budget with revenues and costs; c) future plans regarding the extension of the programme in terms of new educational materials, partners and economic sustainability.

The Exploitation Plan has been adjusted during the pilot programme and forms the basis of the continuation of the Free Technology Academy.

3.4.1. Stakeholder Perspectives

Free Knowledge Institute (FKI)

The FKI aims to contribute to the building of a critical mass of skilled key-persons for the move towards Free Software. The ambition of the FKI is to build a strategic network out of the various fragmented initiatives and they strive to reuse and share resources between the partners to make a sustainable and long term effort out of the FTA. The FKI intends to

strengthen its position as non-profit knowledge centre in the field of Free Software and Free Knowledge in general.

Universitat Oberta de Catalunya (UOC)

The UOC desires to internationalise its master programme on Free Software and gain international recognition for their pioneering work in this field, while broadening the international user base of the University Campus framework. Their approach is to share the further development and maintenance of the course materials from its Free Software Master Programme. In order to do so, the UOC has published all course materials as Free Educational Materials (OER), and is focussing on their translation into English and other languages.

Open Universiteit Nederland (OUNL)

OUNL wishes to test the use of and continue with the development of Open Educational Resources. They intend to advance the knowledge about and use of Free Software and Open Standards, which is part of their university strategy and ICT architecture. Advancement of their experience with virtual class campus education and testing the University Campus framework is another benefit for OUNL, and they are interested in offering international accreditation to its learners. OUNL is keen on adding additional partners to the FTA Network while expanding the FTA to other levels of education lies in their interest as well.

University of Agder (UIA)

The Department of Information Systems of the UIA has been working with the UOC and other universities since 2002 to define an international master programme on Free Software (the MoLOS project). Their staff has been teaching in the area of Free Software for a number of years, and the expertise in the area of e-collaboration and eCollaborative learning will be beneficial for further development of this joint effort. For UIA, the advantage exists that their own master classes, not yet included in the FTA, can easily be internationalised as well.

3.4.2. Associate Network Partners

The FTA Associate Partner Network is a network of organisations sharing a common interest in offering certain courses in the area of Free Technology. It is open for parties who are enthusiastic to join this effort and collaborate in specific tasks. The FTA intends to extend the current network of partners and collaborations. Interested parties are invited to join the FTA Associate Partner Network[42] and benefit from and contribute to the FTA.

Many possibilities for collaboration exist, including the contribution of course materials or the joint development or translation of new ones, sharing tutoring staff, running existing or new courses on the campus, and exploiting these together, communicating and attracting new groups of learners, contributing to the ongoing technological development of the virtual campus and/or sharing knowledge about the Campus and the applied distance learning methodologies.

The FTA strives to transfer the expertise acquired in the initial phase through collaboration programmes, specially within the FTA Associate Network. This expertise includes the technology behind the virtual campus, the adopted methodology for distance education and

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42 http://ftacademy.org/about/associate-network

the content of the courses themselves. Besides, the FTA network helps co-developing and exploiting the developed resources.

Current Associate Partners are listed further in this Chapter. With each of them, the FTA has specific agreements based on the nature of the partner organisation and their target groups and networks.

3.4.3. Market

After extensive research done by FTA Staff, it can be concluded that there is currently no other international master programme on Free Software and Open Standards. The FTA is the first international programme offering a shared virtual campus programme on Free Technologies at Master level.

It is expected that the programme fulfils a need, especially for the target groups as defined. The results of the Pilot Programme also point into that direction. The FTA needs to be prepared for a rapid growth.

3.4.4. FTA: *Sui Generis*

The Free Technology Academy offers a unique set of essential and distinguishing features:

- *Distance Learning Methodology*: providing individualised attention and communication with learners internationally and nourishing the public's need for lifelong learning in education by providing access to all learners.

- *Use of Free Software and Interoperable Campus Framework*: guaranteeing its sustainability and the transfer of the technology and expertise to all present and future partners.

- *Use of Open Educational Resources (OER)*: all materials can be used for any purpose, adapted and distributed without restrictions.

- *Course Modules about Free Software and Open Standards*: bridging the gap between the adoption of free technologies and the lack of high quality educational trajectories.

- *Quality Assurance*: extensive quality reviews and quality procedures.

- *International Recognition*: certification for the completed FTA modules and waivers in case of continuing a complete cycle of study at one of the universities .

- *International and Multidisciplinary Collaboration*: partnerships through the FTA Associate Partner Network, crossing the traditional boundaries between education, government and business .

3.4.5. Dissemination and Network Building

Dissemination and Network Building are critical for the success of positioning the Free Technology Academy. A Communication team has been set up to disseminate the Free Technology Academy in all of the regions, develop the communication strategy and get in contact with local main target groups. Details on Dissemination and Network Building can be found below in this Chapter.

3.4.6. Exploitation

The FTA offers its partners the following economical opportunities:

1. shared costs in the production and maintenance of a common curriculum, course materials and a state-of-art study programme

2. shared costs for joint communication efforts to reach out to learners and potential staff and (guest) lecturers

3. shared costs for setting up a state-of-art virtual campus, aiming to be a showcase fully based on Free Software, Open Standards and with 100% Open Educational Resources

4. shared costs for maintaining a common set of quality assurance and recognition procedures (including the international Scientific Council)

5. shared income generated by student fees for courses at the FTA

6. income generated for the sale of printed copies of course materials

7. virtual mobility through the renting out of partners own staff to the FTA programme

The FTA Board has agreed about the main process of registration, payment, course assessment and certification. Specifically, learners register at the FTA website and pay their tuition fees for the courses to the coordinating partner, i.e. the Free Knowledge Institute. The courses are run and taught by staff from the FTA partners. And after completing a course successfully, the learner will get an FTA Certificate for the particular course, recognised by FTA partners. The revenues and costs incurred by the FTA course programme are shared between the partners based upon prior budgets and exploitation agreements by the FTA Board.

In the Exploitation Plan, the costs levels for the main activities have been worked out. With the budget calculation model possibilities of breaking even and reaching positive numbers can be seen. The scenarios for becoming sustainable are ambitious but lie within the reach and plans as have been discussed in the FTA Board. When reaching out to the target groups with sufficient success and when the courses are run according to expectation the FTA should be able to grow sufficiently. It is however important to expand the network of associate partners and with them to expand the course programme.

The exploitation of the FTA has initially been supported by the EC Lifelong Learning Programme. After the LLP-funded period the FTA uses the same economic model, as described above. The pilot programme has served as a start of the FTA and as a test run that allows the FTA Board to improve this model and all other aspects relevant to reach the level of sustainability.

3.4.7. Pilot Programme & Course Schedule

The FTA Educational Programme started with a pilot that was spread over three terms. The objective of the pilot was to test the FTA Campus, the course modules and materials, the learnig methodology and learner experience and the feasibility of the exploitation plans. It was also the first step towards a sustainable model for the FTA.

First Run

Module	Start	End
The concepts of Free Software and Open Standards	25-01-2010	16-04-2010
The GNU/Linux Operating System	25-01-2010	16-04-2010

In the first run of the FTA pilot, two of the most popular courses of the Master Programme at UOC were offered. Being a brand new initiative that wasn't still widely known outside the partner network, most of the learners in this run came from different programmes at one of the partner universities, especially from OUNL. Despite this, a total of 68 learners participated in the first run. The overall experience was satisfactory for learners despite the fact that some aspects of the methodology and daily operation of the campus were still being tested. Many of these learners enroled for additional courses at the FTA after finishing this first run.

Second Run

Module	Start	End
Web applications development	26-04-2010	16-07-2010
Economic Aspects of Free Software	26-04-2010	16-07-2010
Software development	26-04-2010	16-07-2010

Some of the changes suggested by learners and tutors during the first pilot were implemented in the second run. For example, the "blog" activity was temporarily removed from the virtual classrooms because it had not been used in the first courses.

The course Economic Aspects of Free Software had to be cancelled because the assigned tutor became unavailable due to health problems. After this incident, all FTA courses are assigned a backup tutor from the start.

43 learners participated in the second pilot run (excluding those enroled in the cancelled module). Again, the level of satisfaction of learners was quite high.

Third Run

Module	Start	End
The concepts of Free Software and Open Standards	06-09-2010	06-12-2010
Legal aspects of the Information Society	06-09-2010	06-12-2010
Network Technologies	06-09-2010	06-12-2010

In the third and final run of the pilot, three modules were offered with a total of 50 enroled students. Further modifications were made to the methodology, based on the feedback from learners and tutors of the first and second pilot runs. The extension of the modules was extended from 12 to 13 weeks, and tutors were instructed to suggest additional activities to be completed and discussed using the classroom forums and the FTA wiki. The Network Technologies module was extended even further due to the fact that the course materials were incomplete and the tutor complemented them with group activities and external materials.

The success of the previous runs allowed the FTA to launch a scholarship programme consisting on a number of waivers for this round. A simple application and review process was set up by the Consortium and a total of 17 scholarships were granted. The overall experience with this programme was satisfactory, although not all beneficiaries were as active in the FTA Campus as was required. The evaluation results of this scholarship programme are being discussed within the FTA Consortium with the intention of repeating it with the required improvements in the future, when the economic situation allows it.

3.5. Dissemination & Network Building

3.5.1. Dissemination Activities

The dissemination strategy focuses on external communication, although internal communications were also a part of this objective. Communication and information flows have been coordinated by the leading partner and the required infrastructure for daily operations has been set up, including mailinglists, Jabber Instant Messaging, IRC and internal wiki pages.

The following tasks have been completed in the area of Dissemination:

- The main visual identity elements have been created: logo, colour palette, rules, typographies, etc. The FTA Consortium partners use templates with the FTA logo and design and personalised per FTA Consortium partner for presentations, reports, and other publications.

- Promotional materials have been designed. These include an informative brochure, stickers, foot banners, and a computer wallpaper.

- A public website has been created at http://ftacademy.org. This website acts as a central point for all information about the FTA and the educational programme. At the same time it also serves as a portal and entry point for the FTA Campus.

- The user interfaces of the main tools of the FTA Campus has been adapted to the FTA look & feel.

- The FTA community portal is a complementary space where anyone is invited to join and participate. This space is integrated with the rest of the campus facilities and adds a new dimension to the FTA platform: everyone is able to participate in a social learning enviroment.

The Free Technology Academy Consortium partners have published eleven press releases and five announcements, including the first presentation of the Free Technology Academy and the FTA officially opening its doors. New Associate Partners have been announced, as well as the installation of the Scientific Council members, the availability of new course materials, publication of new modules and changes or additions to the Pilot Programme.

FTA Announcements and Press Releases were sent through the FTA Announce mailinglist, which had 1135 members on December 31st, 2010. They were also disseminated to the contact databases of all Consortium partners, distributed to community forums and webspaces, and sent to various mailinglists with topics on Free Software, Open Standards, education, technology and culture.

Background articles and papers have been published in several types of media: in printed media such as magazines, newspapers, chapters in books, conference proceedings; and on news websites, websites of particular organisations, blogs and international and national newsletters from Free Technology Academy Consortium partners, partners in the FTA Associate Partner Network, and other collaborating organisations. Main publications were:

- *Free Technology Academy: a Joint Venture of Free Software and OER[43]* , Conference paper for OpenED 2010 Conference Barcelona . Authors: Tebbens, Wouter; Megías, David; Jacovkis, David; Lex, Bijlsma. Publisher: Universitat Oberta de Catalunya; Open University of the Netherlands; Brigham Young University , 15/09/2010

- *Free Technology Academy: Towards sustainable production of free educational materials[44]* . Authors: Tebbens, Wouter; Megías, David; Jacovkis, David; Lex, Bijlsma, 08/09/2010

- *Free Technology Academy: a European initiative for distance education about Free Software and Open Standards[45]* . Authors: Tebbens, Wouter; Megías, David; Santanech, Francesc; Lex, Bijlsma , 03/07/2009

Representatives of the FTA Consortium Partners have attended over 20 conferences to give lectures or presentations about the FTA. The partners also support the organisation of conferences by submitting papers, participating in programme committees, chairing sessions, reporting, etcetera. Selected workshops and gatherings were used as FTA Roadshows. These are in-depth presentations of the FTA with a small audience, in order to provide for one-to-one communication and enough room for detailed questions and discussions.

3.5.2. Network Building Activities

The FTA Associate Partner Network has been set up to communicate and attract new groups of learners, as well as to contribute to course materials or joint development or translation, to share tutoring staff, to run existing or new courses on the Campus and exploit these together, and to contribute to the technological (further) development of the Campus and/or share knowledge about the Campus and the distance learning methodologies applied.

The following activities have been undertaken:

- Various different Associate Partner roles and contributions have been defined. Examples of contributions are: translation and localisation of training materials; dissemination among contacts and target groups; contribution to the creation of case studies; contribution to the evaluation of the effectiveness of the training; contribution of relevant feedback and review FTA Course materials; participation in the development of future courses ; contribution to the FTA programme through Guest Lectures; provision of feedback on the current study programme and advise on the extension of it; promotion of the FTA under its members and supporters; endorsement of the materials of the FTA on it's website and promotional materials.; use of discount vouchers (these can provide a discount of up to 20% of the full fee of a particular course of the standard study programme, details are defined in the Memorandum of Understanding); participation in various FTA teams.

- A model Memorandum of Understanding (MoU) for such partnerships has been prepared. This model is adapted to the collaboration possibilities for each individual Associate Partner.

Eleven Memoranda of Understanding have been signed with Associate Partners within the duration of the project. The current Network is very diverse, varying from universities to non-profit organisations and communities. The following countries are present in the network: Switzerland, Netherlands, Norway, Bulgaria, Spain, Argentina, United States, Germany, Greece, plus organisations active around the globe. Please note that several additional

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43 http://hdl.handle.net/10609/4850

44 http://wikis.fu-berlin.de/download/attachments/59080767/Tebbens-etal-Paper1.pdf?version=1&modificationDate=1285065984000

45 http://freeknowledge.eu/fta-wiki/images/0/06/FTA_European_initiative_v1.pdf

agreements are being negotiated at the time of writing. Additional countries in the process of signing are Chile, India, France and Slovakia.

The FTA Associate Partner Network provides a very valuable channel to disseminate information about the FTA and reach new targets, both at the institutional and the individual level. Through the Associate Network, the FTA has access to many academic and non-academic channels, in the national, European and international levels.

The current FTA Associate Partner Network is described in Chapter 4.6.

4. Partnerships

The FTA offers a unique opportunity for all Consortium and Associate Network partners to lead the inclusion of Free Software and Open Standards in the European Higher Education through the use of state-of-the-art technologies and methodologies for distance learning.

The FTA Consortium partners benefit from a win-win situation which guarantees a successful collaboration during the funded period and afterwards. University partners reinforce each other with shared expertise and best practices on distance learning and improve the mobility of their students. At the same time, they attract FTA students to their own official degrees thanks to the recognition of FTA certifications. The Free Knowledge Institute has the opportunity to coordinate a high quality virtual campus, reinforcing its educational activities and opening opportunities for future cooperation with members of the FTA Associate Network.

The FTA Consortium consists of:

4.1. Free Knowledge Institute

The Free Knowledge Institute (FKI) is a non-profit organisation that fosters the free exchange of knowledge in all areas of society. Inspired by the Free Software (FS) movement, the FKI promotes freedom of use, modification and distribution of knowledge in four different but highly related fields: education, technology, culture and science.

The FKI is a recently created spin-off of ISOC.nl, the Dutch chapter of the Internet Society, to manage the expansion of the SELF Platform and other FS related activities under an independent although closely related entity.

Its main areas of expertise are the management of multidisciplinary projects and the advocacy of Free Software and Open Standards. One of the main assets of the organisation is a huge network of contacts in the ICT industry, governmental institutions at national and European level, educational institutions, and civil organisations such as the Free Software Foundation Europe or the OpenDoc Society (of which FKI is a founding member).

4.2. Universitat Oberta de Catalunya

The Universitat Oberta de Catalunya (UOC) is an innovative web-centric virtual organisation which has relied on the intensive use of Information and Communication Technologies (ICT) from the very beginning. The UOC's main goal is that every person satisfies their training needs, making their effort as profitable as possible, regardless of where they are and optimising their time. The UOC develops the Virtual Campus as a network community where limitations of space and time are overcome. It also uses an educational methodology based on the complete personalisation and guidance of the student. Students, lecturers and managers interact and cooperate in that network community to create, structure, share and disseminate knowledge.

The UOC has a top quality team of professionals, which forms part of an integrated and enterprising organisation focused on excellence and which has the quality of student support and effectiveness as two of its mainstays. This structure includes business initiatives, units for innovation and transfer, and institutes.

4.3. Open Universiteit Nederland

OUNL is an independent institute for distance learning at university level founded in 1984. It addresses the wide-ranging learning needs of people during their course of life, plus the need to achieve a considerable increase of the knowledge level of the community at large.

In addition to Bachelor and Master programmes, the OUNL offers professional education, graduate level and in-company programmes. Annual student enrolment totals over 30.000. In 2006 the OUNL started offering free Internet courses through the Open Educational Resources (OpenER) project.

OUNL contributes to FTA through its School of Computer Science and through its Educational Technology Expertise Centre (Dutch acronym OTEC). OTEC bundles OUNL's research and technology development expertise. OTEC occupies a prominent position in the international RTD and Open Standards area and has a leading role in RTD and standardisation activities for learning technologies at the national, European and global level. OTEC actively develops Open Standards and Free Software as part of its RTD activities.

4.4. Instituto Superior de Ciências do Trabalho e da Empresa

Instituto Superior de Ciências do Trabalho e da Empresa (ISCTE, Portugal) is one of the leading business schools in Portugal, with a strong focus on ICT and e-learning. The ISCTE will bring to the project: a) its current educational materials, to complement the ones from UOC; b) specialist educators on Free Software; c) its research experience in distance education; and d) its connections with the industry around FS. This partner has withdrawn.

4.5. University of Agder

The University of Agder (UIA) has a background of extensive research in the area of e-collaboration and eCollaborative learning, software development, web development with Free Software, and has experience in university course development in the area of Free Software.

UIA is a public university, with its main funding based on public funding and with tuition free of charge for the most part of its programmes. It has a growing part of further education to professionals, some of these based on distance learning. UIA prioritizes cooperation. Internationally, UIA cooperates with over 175 partner institutions through student, faculty and staff exchange. UIA is the only Higher Education Institution in Norway to have been awarded both the ECTS and DS labels by the European Commission. Annual student enrolment totals over 8.000.

The Department of Information Systems of the UIA has been working with the UOC and other universities since 2002 to define an international master programme on Free Software (the MoLOS project). Their staff has been teaching in the area of Free Software for a number of years, and the expertise in the area of e-collaboration and eCollaborative learning will be beneficial for further development of this joint effort.

4.6. FTA Associate Partner Network

The FTA Associate Partner Network strengthens the FTA and widens its potential audience. Currently, the Network consists of the following organisations:

4.6.1. seed, Switzerland

Seed is a non-profit enterprise, born in 2006 by the experience and enthusiasm of young professionals in the field of education, technologies, and international cooperation. Seed is involved in communication, education and technologies projects in the world of non profit, that is in the social field in Switzerland and Italy, and of international cooperation.

4.6.2. Gleducar, Argentina

Gleducar is a free educational project that emerged in Argentina in 2002. It is also an important NGO (Civil Association) from Argentina in the field of education and technology. Gleducar is an independent community composed of teachers, students and education activists linked by a common interest in collective work, cooperative knowledge building and free distribution of knowledge. The project works around different themes, such as Open Education, Free Knowledge, Popular Education, peer education, collaborative learning and Free Technologies, and promotes the use of Free Software in schools as a pedagogical and technical system, with the objective of changing the paradigm of production, construction and dissemination of educational content.

4.6.3. Foundation for P2P Alternatives, International

Is a multi-disciplinary research network exploring peer-to-peer based practices across all fields, from economics and politics to religion and developments in civil society. The Foundation's principal activities are research, events and serving as a platform for sharing information and community.

4.6.4. Free Software Foundation, USA

The Free Software Foundation, founded in 1985, is dedicated to promoting computer users' right to use, study, copy, modify, and redistribute computer programs. The FSF promotes the development and use of free (as in freedom) software -- particularly the GNU operating system and its GNU/Linux variants -- and free documentation for free software. The FSF also helps to spread awareness of the ethical and political issues of freedom in the use of software, and its Web sites, located at fsf.org and gnu.org, are an important source of information about GNU/Linux.

4.6.5. Universidad Rey Juan Carlos, Spain

The Rey Juan Carlos University (Spanish: Universidad Rey Juan Carlos, URJC) is a public university located in Madrid (Spain). It was created in 1996 and has the Latin motto Non nova, sed nove ("Not new things, but in a new way"). It is the most modern of the six public universities in the Autonomous Community of Madrid, provides teaching for some 25,000 students on four different campuses. The University's commitment to teaching and research excellence and its collaboration with industry and business, combined with superb facilities and a marked international profile make the URJC a point of reference among Spain's universities as they face the challenges of the 21st century. The URJC is fully committed to undertaking academic research as is evidenced by its own initiative to offer incentives to increase scientific output. The Centre for Innovation, Technology and Knowledge Transfer (CINTTEC) has been commissioned to manage and further technological development at the University, encouraging the transfer of science and technology to industry, while the Technology Support Centre (CAT) makes its facilities available to academic teaching staff, researchers and local firms.

Libresoft offers Software Engineering scientists the possibility not only of having a closer look at the product that is being created, but also of studying in detail the whole development process and its technical, social and economic consequences. The main research topic is the quantitative measurement of libre software development patterns and characteristics in order to gain knowledge on the process, mainly by studying the different agents that participate in it, the use of the different development and development-supporting tools as well as the methods that have been followed.

4.6.6. ict@innovation, GIZ and FOSSFA, Germany and Africa

The ict@innovation programme builds capacities in African small and medium size ICT enterprises to make a business with Free Software. ict@innovation aims to encourage the growth of African ICT industries, particularly in Southern and East Africa, through three main

actions: spreading Free Software business models for enterprises in Africa, fostering Free Software certification and supporting innovative local Free Software applications for social and economic development.

ict@innovation is a partnership of FOSSFA (Free Software and Open Source Foundation for Africa) and the 'Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)', Germany [until 2011: InWEnt, now part of GIZ].

4.6.7. Internet Society Netherlands

The Internet Society (ISOC) is a nonprofit organisation founded in 1992 to provide leadership in Internet related standards, education and policy. Worldwide, ISOC brings together 44000 internet professionals in 170 countries. They are dedicated to ensuring the open development, evolution and use of the Internet for the benefit of people throughout the world. In the Netherlands, ISOC.nl unites around 1000 individuals with a background in the internet sector, business, government, non-profit sector, and from the financial, law and academic fields.

Furthermore they provide leadership in addressing issues that confront the future of the Internet. ISOC is the organisational home for the groups responsible for Internet infrastructure standards, including the Internet Engineering Task Force (IETF) and the Internet Architecture Board (IAB). They act as a global clearinghouse for Internet information and education and facilitate and coordinate Internet-related initiatives around the world.

4.6.8. Office for Learning Technologies - Universitat Oberta de Catalunya, Spain

The Office of Learning Technologies (OLT) leads the development of UOC's learning model. With its multidisciplinary team, its mission is to create the learning environments of the 21st Century for the new digital generations and global citizens. The objective is to go beyond designing for functionality and usability, and to design for engagement and motivation to learn, enriching them as students as well as people.

4.6.9. University i Agder, Norway

The University of Agder has been a full Consortium Partner in the FTA from November 30, 2009 onwards. As they cannot commit to be a full Consortium Partner in the second phase, after the EC-funded period, but still want to be involved with the FTA, provide tutors for several modules, and recognise most of these modules, they have decided to become an Associate Partner. The univeristy has 8500 students and 900 members of faculty and staff. UiA is one of the largest institutions for higher education in Norway. The university has campuses in Kristiansand and Grimstad and until Summer of 2010 also in Arendal. It has a number of programmes in different discipline areas such as Economics and Social Sciences, Teaching, Nursing, Technology and Science, Humanities, Fine Arts and also Information Systems and Computer Engineering, ranging from bachelor elvel up to Ph.D. The university college became Norway's 7th university on September 1, 2007, after the government had granted it status as university on August 10, 2007.

4.6.10. Varna Free University, Bulgaria

Varna Free University "Chernorizets Hrabar" was established in 1991. With a resolution of the 37th National Assembly from 21 July 1995 the University was given the status of a higher educational institution. The quality of education is certified also by the ISO 2001:1994, ISO 9001:2008 and by UKAS /UK/ and ANAB /USA/.

VFU counts with approximately 12000 students, approximately 700 teachers and 300 employees. In the academic year 2010/2011, VFU started to supply a total of 35 degrees, 15 master degree courses and 10 doctoral programs in the field of social, economic, computer,

technical, legal, security and humanitarian sciences. It is divided into three faculties (International Economics and Administration, Technical Sciences and Legal Studies).

The Faculty of International Economics and Administration includes, beside economics and administration studies, also education in informatics. The department of Informatics provides bachelor and master degrees. The Major Curriculum covers knowledge in data structures, object-oriented programming, languages used in Web technologies, operating systems, computer networks administration, network programming, Internet communications security, wireless and information technologies for mobile phones ect. Department members and students participate in several research projects in the field of ICT.

4.6.11. Aristotle University Thessaloniki, Greece

The Aristotle University of Thessaloniki is the largest university in Greece. The University Campus covers some 23 hectares close to the centre of Thessaloniki. It comprises 7 Faculties organized into 33 Schools, 5 faculties with only 1 school each, as well as 4 independent Schools (a total of 42 Schools).

4.7. Expanding the FTA Associate Partner Network further

Many partnerships are still being worked on, though the LLP-funded period has ended. As the Free Technology Academy continues, the need for a broad network and support from important organisations and institutions is still highly beneficial. Six more agreements are in the process of signing.

5. Plans for the Future

5.1. Free Technology Academy Continued

For the partners, the continuation of the FTA does not only make sense from an economic perspective, but contributes to the reputation of leaders in the fields of Open Educational Resources, Free Software and international collaboration. In a very short time the FTA has already been able to position itself as an international reference in these fields and many organisations show their interest in joining this effort.

For learners the participation in such international programme has several advantages: participation in an advanced course

Figure 3: The different actors in the FTA sustainability model

programme on Free Software and Open Standards, through a state of the art virtual campus with completely free educational materials (Open Educational Resources), which allow the use, personalisation and reuse outside of the FTA. Learners participate in virtual classrooms guided by skilled professionals and receive guest lectures from recognised international experts. The distance education approach allows learners to adapt their studies to their daily working life, while the international approach allows to attract the best professionals and facilitate the exchange of experiences between learners and lecturers from different countries and sectors. After each course the learner can obtain an FTA certificate, while a complete master degree can be obtained at one of the participating universities.

In order to make a long term and sustainable effort out of the FTA, organisational aspects, economic aspects and concrete plans for the coming period have been agreed upon between the consortium partners.

5.2. Building a shared master curriculum

FTA partners and other interested parties and peers are joining efforts to continue the development of a complete curriculum on Free Technology that is commonly developed and discussed in the open. For this purpose the FTA Campus wiki[46] is used as one of the spaces to define existing courses, materials and plans and interests of peers and institutions in this area.

5.3. Free Technology Master Proposal

The Free Technology Master (FTM) proposal is composed of the core network of universities and organisations interested in the shared Master Curriculum and aims to set up an international master programme on Free Technology with recognised certificates and
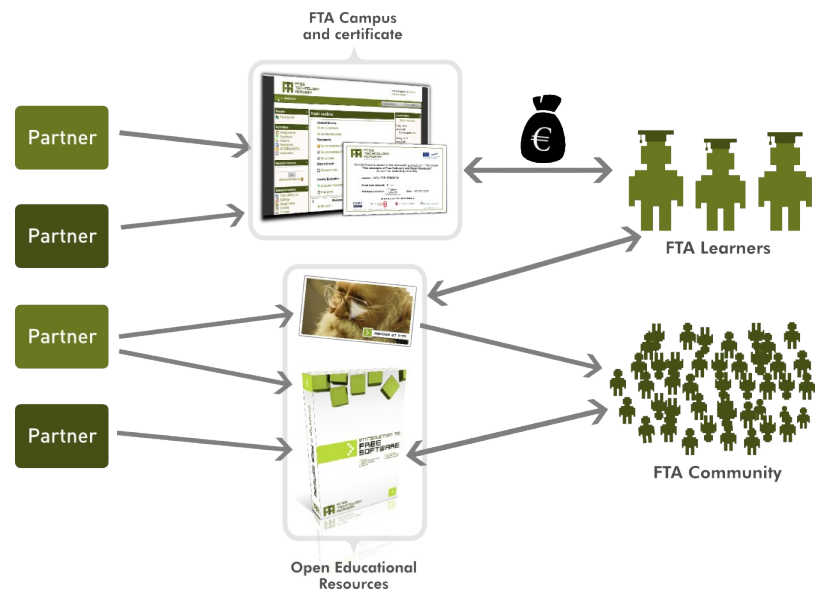
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46 http://campus.ftacademy.org/wiki/index.php/Master-Curriculum

multiple degrees. With this purpose the virtual campus, educational methodology and course modules of the Free Technology Academy will be used to build a common curriculum between different universities and research centres under coordination of the Free Knowledge Institute. It will especially target ICT students, professionals, educators and decision makers.

The FTM will provide four main results:

1. a jointly designed master curriculum in FS;

2. a complete set of distance learning modules on FS and OS published as free educational materials (or OER);

3. recognised certificates and bilateral agreements on double or multiple degrees; and

4. a network of HE institutions, vocational education and training organisations, companies and civil society organisations to encourage cooperation and connect to market needs.

Building upon the FTA will enable partners to

1. kick-start the programme with reduced effort and lead time;

2. reach a critical mass of learners; and

3. promote virtual mobility of both learners and teachers.

Moreover, the project will take the production of OER one step further by applying a completely open development process, which will ensure reduced development time and help maintain and facilitate translation of the course materials.

The FTM proposal has been submitted to the Erasmus Programme by the end of February 2011 and is being assessed by the European Commission.

6. Contribution to EU policies

6.1. Cooperation

The Free Technology Academy is fully aligned with the creation of the European Higher Education Area. The FTA is founded on the close cooperation between partner universities in several aspects: mutual recognition of qualifications, development of educational content, quality assurance and knowledge transfer on distance learning technologies and methodologies. This cooperation between HEIs facilitates a high mobility of both learners and educators.

6.2. Virtual Campus

One of the main goals of the FTA is the transfer of knowledge and expertise on virtual campus technologies and methodologies to other HEIs and educational organisations in general. This is reflected on the fact that the whole FTA Campus technology is released under Free Software licenses, and all educational materials are published as Open Educational Resources without exception. Promoting the use of Free Software and Open Standards, as well as the use and production of Open Educational Resources, has been a part of European policies for a long time.

6.3. Multi-sectoral network

The fact that the project is coordinated by a not-for-profit organisation reflects the fact that the FTA aims to transcend the academic environment to establish a multi-sectorial network that links HEIs with other educational sectors as well as civil society organisations and the private sector. This network will allow for decision makers with different backgrounds to share expertise and good practices in the areas of lifelong learning, distance learning, virtual campuses and education and training on Free Software and Open Standards.

6.4. Learners

As for the learners, the FTA is targeted to groups of specific interest for the objectives of the Lisbon Strategy. Virtual Campus technologies together with a flexible and adaptive methodology make it possible for professionals and decision makers to join educational programmes at any age, while facilitating mobility of both students and teaching staff. Regarding the concrete competences addressed by the FTA educational programme, two key competences in the Lisbon Strategy are main topics of the FTA: digital competence and basic competences in science and technology.

6.5. Free Technologies

Several national and regional governments have already defined the use of these technologies as a strategic goal. The value of Free Software and Open Standards has also been recognised by the European Commission[47] [48] and was one of fundamentals of the FP6 objectives for Software and Services. Since Knowledge Societies are based on sharing and multiplying of knowledge, the sharing of software knowledge becomes essential for our present and future societies. Therefore, the achievement of the Lisbon goals is directly

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47 Free and open source software activities in European Information Society initiatives, European Commission's Seventh Framework, URL: http://cordis.europa.eu/fp7/ict/ssai/foss-home_en.html

48 Neelie Kroes, European Commissioner for Competition Policy, Being open about standards, 2008, URL:http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/317

related to the adoption of FS and OS. This is supported for instance by the Open Source Observatory of IDABC and the Worldbank infoDev report.