Erasmus Plus Programme – KA2 Strategic Partnership in the field of VET

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| **FOSS4SMEs****IO1/A1 SYNTHESIS REPORT** |

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# INTRODUCTION

This *Synthesis Report* is meant to collect and put together the results of the six different Country Reports(for Greece, Germany, Italy, UK, Ireland and Sweden) developed by the partners of the FOSS4SMEs project. Each Country Report, as the main deliverable foreseen by the IO1/A1 ‘Research’ phase, comprises an overarching and comprehensive overview about the different national situations with relation to the usage of *Free and Open Source Software* (FOSS) within SMEs across Europe.

The Country Reports are formed by two collateral phases:

* a first *Desk Research*, i.e. the research and collection of existing training materials and contents relevant to the development of the FOSS *Business User* profile, plus research about existing curricula at national level (with reference to NQF);
* a *Field Research* conducted by each partner within the context of its own national SMEs panorama. A minimum of 20 enterprises were to be contacted by each partner, submitting them the survey prepared by the project partnership altogether to investigate about the training gaps of the target group and the possible drivers / obstacles faced for the adoption of FOSS solutions in their business.

After the finalisation of the six Country Reports, this *Synthesis Report* comes with the purpose of wrapping up the main findings and analyse the responses obtained from a qualitative standpoint.

The conclusions here drawn will form the scientific ground upon which the ECVET curriculum of the European FOSS Business User (FOSS-BU) will be developed. Furthermore, the contents and main topics identified are to be addressed by the FOSS4SMEs *Training Course* (IO2), namely a free online educational resource for managers and staff of existing and start-up SMEs, to allow them uptake the open software digital transformation and improve their performance and competitiveness.

# DESK RESEARCH

# 1.1 Existing training materials and courses relevant to the profile of the FOSS – Business User

In this preliminary section, each partner was asked to provide a list of **existing courses and training materials at European level**. The aim of this activity was to review the current *state-of-the-art* about educational products related to FOSS developed within the EU, gaining insights on the methodologies adopted and the contents selected. The analysis of this kind of educational offer gives us the opportunity to assess the extent of knowledge and skills already shared in topics of our interest. The characteristics of different target groups have also been taken into consideration, bearing in mind diverse competence profiles.

From a general perspective, almost all the courses and training materials collected come from **private actors relevant to FOSS**, with a strong emphasis on competence development. These are mostly aimed either at individuals in an educational setting (schools, colleges, universities) or in a private function, and in many cases consists of tutorials for specific open source solutions provided by volunteer groups, open source communities and relevant organisations in the sector. The only country reporting contents developed with **governmental support** at some degree is the UK, where *Cisco* (one of the main players on the international ICT field) partners with many public organisations to deliver programmes that contribute to education and the innovative use of technology. In addition, the *UK Cabinet Office* provides information on Open Source aimed at public services, but much of their resources are relevant for SMEs looking into FOSS as well. Generally speaking, the UK government is open towards the use of open source software in general and is actively encouraging its public services to consider the use of open source software where possible.

In all the other countries, several specific courses about open source materials – even less famous than e.g. Linux or Android – can be mostly found at **non-formal education** and **VET level**. In Greece, FOSS courses can have the form of a workshop, a seminar, a bigger (university) conference, a (community) lab, an online tutorial, or a generally open event. In line with the **philosophy of freedom and openness**, the courses can be attended by anyone interested in the topic.

In many cases, materials consist of guidelines and tutorials (either in video or text) for subject-specific software solely dedicated to some professional fields. One plain example relies in the category of open source GIS (*Geographical Information System*) software training materials, spotted by both Italy and Ireland, which are designed as ideal courses for anyone that works with maps and geographical data.

There are courses involving FOSS and related technologies aimed at a broad range of businesses and professional roles, including system administrators, development managers, quality managers, decision makers, project leaders, system architects, web developers, etc. However, many private actors delivering FOSS related courses offer at the same time many other courses based on proprietary counterpart software (mainly from vendors like Microsoft, Adobe and Oracle), like it happens in Sweden. Training for common proprietary products are generally targeted to workforce with **low technical knowledge**, as opposed to System Administrators, who on the other hand seem to be more attracted by FOSS-related solutions to be implemented within their business. It’s the case of German SMEs, which reportedly make a good use of GNU/Linux open source database software, as well as web infrastructure.

# Existing Curricula at National Level Relevant to FOSS

In this second section of the Desk Research, each partner was called to search for available curricula relevant to a *FOSS Business User* and recognised by their national Qualification Frameworks. The situation outlined by the six Country Reports, however, shows a **substantial shortage** of qualifications of this kind across Europe. Indeed, **UK** **is the only country** among the six **offering educational paths related to Open Source technologies** and still complying with the framework of its formal education. These qualifications (registered within the different regulatory bodies of England, Wales, Scotland and Northern Ireland) touch the ICT broad field with different focuses, but the attainment of a good level of **computing knowledge and competence** seems to be a common mandatory feature across them all. The EQF level of this curricula ranges between 3 and 4, which generally matches with intermediate education and VET schools. Even in the British context then, FOSS is under-represented within Higher Education paths.

In the remaining five countries, no nationally accepted qualifications strictly related to FOSS have been reported at any EQF level. What we can find are mainly certifications offered by private institutions which are generally recognised in the job market and particularly in the IT domain. The majority of them are covered by the LPI (*Linux Professional Institute*), as they get the higher degree of recognition within the European business landscape. All of them, as a matter of fact, fall under the category of **non-formal education.**

To wrap things up, the overall desk research collecting existing courses, training materials and content relevant to the *FOSS – Business User* has revealed that the resources available are admittedly in good number across Europe, but still with **little focus on business user’s needs**. Programs and organisations in place almost exclusively target students or individuals acquiring skills privately, and where the focus is on business, the support offered stops at the consultancy and strategic level.

As a result, there is considerable effort involved for SMEs to identify and access programs suitable for their needs, often requiring them to combine offers from different training providers. This is further complicated by the lack of regulated and registered qualifications and certifications for these programs.

# FIELD RESEARCH

The purpose of the Field Research was to investigate deeply into the **training gaps** of the project’s target groups and their motivation to adopt FOSS solutions within their business. To achieve this, each partner reached a minimum of **20 representatives from national SMEs and micro-enterprises** with no business field limitations and submitted them an ad-hoc survey developed by the consortium altogether. The questions asked gravitated around 5 different key thematic areas:

* *Demographics*
* *Level of knowledge and perception about FOSS*
* *The use of FOSS in everyday business activity*
* *The obstacles (actual and perceived) to a migration to FOSS*
* *Suggested learning programme*

Four different language versions of the survey have been created (English, German, Greek and Italian), to make it easier for the relative partners to reach out to their national target and enhance the survey dissemination, aiming for a higher return of responses. It should be pointed out, though, that in some cases the English and German version have been taken by respondents from different countries, affecting their final count. In these cases, IP geolocation information have been used to allocate data to its respective country.

# 2.1 Demographics

Questions about demographics aimed to outline a general profile of the size of businesses addressed. Across the six different countries, the largest representation goes to micro enterprises and SMEs with **up to 40 employees**. Most of them are businesses which have been **active for approximately 10 years**, a figure which when combined to the staff size may lead to the conclusion that some business may find itself at the point of potential growth. As for the type of respondents interviewed, the ***employers***interviewed outnumber the number of *employees*.

# Level of knowledge and perception about FOSS

The concept of Free and Open Source Software here is shown as relatively spread among employers and employees, as **most of them declares to have heard of it to some degree**. However, this concept seems to be still somewhat **misleading**, as some of them wouldn’t be able to tell them apart from a proprietary software. Users often have heard of FOSS to some degree, but their knowledge in many cases remain low and partial. A clear reason for this conclusion stays in the diffused misconception about the concept of **‘free’ software**. Participants may interpret this as ‘free of charge’, while in many cases FOSS products may come with some costs for licensing, additional features or technical support. This common belief is clearly reflected in the large agreement shown about the absolute statement “***FOSS is cost-saving***”, a positive element for small and medium companies which shall always keep an eye on the financial impact of their strategies.

**Sustainability** and **reliability** are the most common perceived benefits of FOSS products, while we have mixed results for what concerns **interoperability, security** and **flexibility**. Not surprisingly, these features score the highest within the German version of the survey, which has been admittedly distributed among a more FOSS-aware audience. The largest concern across the six countries however stays in the availability of **technical support**, as the reaction of respondents in this regard is generally negative. Oddly enough, Sweden proves to be the only exception here, as no one from their respondents claim to disagree about the good level of technical support for FOSS.

# The use of FOSS in everyday business activity

When asked “*Are you currently using FOSS in your everyday activity?*”, the answers indicate a large portion of SMEs professionals which already using FOSS software in their business (except from Italy, where the number of FOSS users almost balances the users of proprietary software). This is positive in terms of the uptake, but it appears there remain some misconceptions about what FOSS is and what it is capable of doing based on the previous results, as a good number of participants claim to be “uncertain” if the software they are using is FOSS or not.

**Lack of awareness/skills** and an adverse **company policy** are the two most common reasons for not using FOSS in their businesses. Almost none of those who are not currently using FOSS claim to have used them in the past, but almost all of them react positively to the possibility of knowing more about its possibilities and a possible future adoption of some solution of this kind, if appropriate.

The **Microsoft Office Suite** and **SAP Resource planning applications** are the two most recurrent non-FOSS software mainly cited as important within the daily business operations of the respondents. What is interesting from this is the lack of software not mentioned. For instance, none of the participants mentioned a web browser, so the assumption would be that they are all using a FOSS web browser (unlikely), or do not consider browsers to be separate software.

The last question in this section wanted to investigate about the parameters considered as important when deciding which kind of software shall be used in everyday business. Not surprisingly, none of the parameters listed is marked as unimportant for an SMEs when it comes to operational software. **Security**, **reliability** and **stability** are seen as the top priorities together with **flexibility**, **affordability** and **long-term sustainability**. The only mixed responses come from the quality of the **user interface**, which for some of the Italian and German interviewees seem not to be so crucial as the other parameters.

#  The obstacles (actual and perceived) to a migration to FOSS

The highest obstacles indicated for the adoption of FOSS resources are **lack of necessary skills**, enough **time to implement** them within their working procedures **external requirements**. Users are mostly satisfied with the most common software they are asked to work with, and migrating towards a FOSS software appear in many cases something that only IT experts might be able to do, without losing precious time and financial resources. On a positive note, most of respondents disagree with the statement ‘*FOSS doesn’t meet my needs*’.

What really emerges from the results of this section is the high level of **uncertainty** about the topic, as almost all of the factors suggested raised doubts among the respondents about whether they would be seen as obstacles or not.

# Learning programme

* *Project Management (proprietary e.g. MS Project, FOSS e.g. Open Proj)*
* *CRM Customer Relationship Management (proprietary e.g. Pipedrive or ProperWorks CRM, FOSS e.g. Sugar CRM)*
* *Accounting/Invoicing (proprietary e.g. SAGE, FOSS e.g. TurboCash or Simple Invoicing)*
* *Cloud/Backup (proprietary e.g. One Drive or Dropbox, FOSS e.g. Cloud or Own Cloud)*
* *Web browser (proprietary e.g. Internet Explorer, FOSS e.g. Firefox)*
* *E-mail (proprietary e.g. Outlook, FOSS e.g. Thunderbird or Kolab)*
* *Office Productivity Suite (proprietary e.g. MS Office, FOSS e.g. Libre Office or Open Office)*
* *Operating System (proprietary e.g. MS Windows, FOSS e.g. Linux)*
* *Security solutions (Firewall/PKI/Digital Signatures/Antivirus)*

In this last section, respondents were asked to indicate all the topics they would have been liked to be trained on, thus providing valuable information for the contents to be developed for the training course foreseen by the project. **Cloud /backup** tools, **Security solutions, Project Management** systems and **Office productivity suite** have resulted to be the top scoring subjects that people would be interested in knowing more about. The rest of the options showed no quantitative consistency between the different countries, while there has been general agreement about the **Web browsers,** as it places everywhere at the bottom of the chart.