

CASCADOSS - An SDI focused OSS project and related initiatives

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ABSTRACT

The CASCADOSS Project was implemented between 2007-2009 with the financial support of the Sixth Framework Programme priority 1.2.4.2.2 Identification of New Methods of Promoting and Encouraging Transnational Technology Transfer. The CASCADOSS name stands for “Development of a trans-national cascade training programme on Open Source GIS&RS Software for environmental applications” The goal of this project was to encourage geospatial end-users, to use OSS for accessing SDI with a special focus on GMES services. The principal target groups of the project were the geospatial end-users from Central and Eastern Member states. The adoption of OSS in these countries is a topic of particular interest while this will reduce licensing costs and will promote indigenous technological development.

The member of the project consortium were Katholieke Universiteit Leuven, Belgium, GISAT s.r.o., Czech Republic, Compet-Terra Bt., Hungary, Environmental Information Centre UNEP/GRID Warsaw, Poland.

The project developed a legal study to understand the OSS licenses, a study on the OSS business models to familiarize users with the marketing nature of OSS products and services, reviewed the most important GIS and RS OSS products mirroring the early 2009 situation, elaborated an evaluation methodology to support the end users in selecting products to their needs and held 8 International and National events for training and know how transfer.

This presentation will introduce the CASCADOSS project, its methodology and its publicly available deliverables, the impact on the Hungarian GI society and some initiatives to continue this project in South East Europe.

Key words: Open Source Software, OSS, GIS, Spatial data Infrastructure, Training, Know-how transfer.

1. INTRODUCTION

Spatial data infrastructure (SDI) is a complex framework that embraces software tools and users among other aspects. Building and operating spatial data infrastructure relies on availability of sufficient software to enable the following functions: publishing meta data (both for data and services), searching and examining spatial data or services, managing the access to spatial data or services, utilizing or processing spatial data or services.

Expenses to acquire software application could be an obstacle for building infrastructure and using services, especially in areas under budget scarcity. Adequate adoption of open standards and Open Source Software (OSS) can minimize the costs. The range of available OSS products covers almost all application fields of GIS and remote sensing. However the number of projects that adopts open source GIS/RS products is still low since the low OSS awareness of the GIS society.

The most important feature of the Open source software (OSS), is the four freedom, the user can:

1. use for any purpose
2. study, by examining the source code
3. modify and improve
4. distribute, with or without modifications

These attributes makes OSS GIS different in particular development technology, business and legal point of view. The transparent development the community around the product results specific flavour products that needs different user approach especially at the beginning. The business model creates profit for the interested companies differently then the well understood proprietary model so the inexperienced user have strong scepticism of using OSS. OSS is copyrighted by its authors, and distributed under different licences that give the four freedoms on the one hand and makes supports the business on the other hand. Thorough understanding of the nature of OSS GIS products improves the confidence to adopt OSS GIS software tools.

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The most advantage of the GIS OSS software is the low entry cost to the market for any market players. As a customer the easy access and lack of license price makes possible the familiarisation with GIS and a smooth start in development. The low initial investment makes possible that the customer can give more emphases on GIS data to obtain, or pre-process them. Entrepreneurs can enter to the market on a low price too since no need to procure licenses. This low-entry-cost feature can have a positive impact on the whole National Economy.

The general objective of the CASCADOSS Project was to encourage geospatial end-users in using OSS by setting up a Trans-national cascade training programme on Open Source GIS&RS software. The cascade training programme was aimed at training, on international level and national levels. Principal target groups for the cascade training programme were geospatial end-users from Central and Eastern Member states. The adoption of OSS in those countries is a topic of particular interest while this would reduce licensing costs and would promote indigenous technological development.

2. CASCADOSS METHODOLOGY

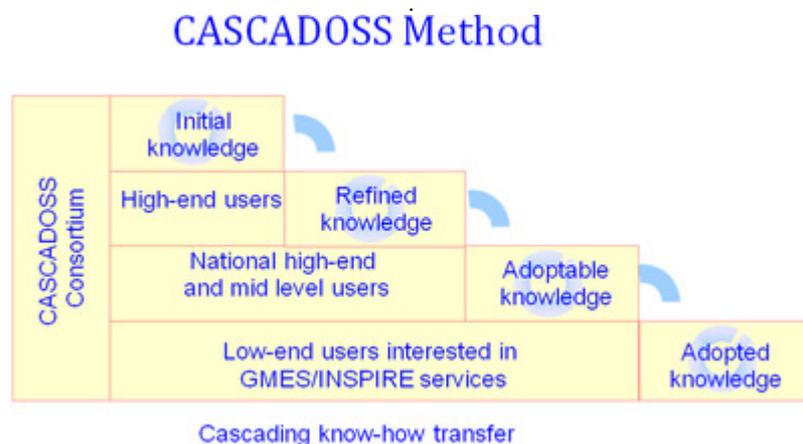
2.1. Comprehensive approach

To improve the confidence of users three main aspects of the OSS software should be understood. What is the nature of the OSS business, what is the sense of an OSS license and what are the technical quality of OSS products. The composition of the project consortium matched to this criterion.

2.2. Cascading know-how transfer

The OSS GIS communities formed around products gain and maintain related knowledge and experience. High end users are active and experienced members of this community, they can be developers, testers, super users of the products. The so called low end users are GIS users who are experienced GIS experts but have limited knowledge of the OSS projects. The methodology of the transnational training program was formed to systematize OSS GIS related practice and skills initially than discuss and refine this core knowledge with high end users on international and national levels and finally transfer it to low-end users via workshops and discussions.

Figure 1. Evolving initial findings to transferable knowledge in a cascading manner.



2.3. Focus on users

The aim of this project was to encourage users to adopt OSS GIS. Users are in this context cover quite broad range from operators via GIS analysts to the ones who are not IT developers but set up spatial data infrastructure using COTS. The distributed studies tend to give response to the questions of low end users regarding OSS GIS.

2.4. Tangible experience

CASCADOSS project provided exercises and training sessions to use as many OSS GIS products as possible. The project developed a LiveDVD including the most important software products, data and project information to make

possible the trial use and OSS GIS training. The attendants could use the CASCADOSS LiveDVD after the events on any PC to study more OSS GIS software.

2.5. Formal training

On national level each member of the consortium organized a formal training for an OSS GIS product, e.g.: the GRASS and its use for hydrological modelling. In this way the workshops provided business, legal, IT management ideas together with some practical skills.

3. Objectives and outputs

3.1. Hierarchy of objectives

The objective of encouraging OSS GIS users and stimulating the related innovation could be broken down to three lower level objectives. Since the open source GIS market vary from the proprietary one as a first step the potential users must understand the products. As a second step the users needs guidance to choose from the software palette. Finally the local OSS GIS communities provide strong background to cope with software issues.

Figure 2. CASCADOSS objectives and outputs



3.2. Outputs

In the first phase the CASCADOSS project elaborated studies regarding the following subjects: Evaluation of OSS GIS/RS products, Reviewed products and made an initial evaluation Legal issues and Business Models.

In the next phase the findings of these studies and training issues were discussed with high end users at the following events between June 16th - 19th at Warsaw. Symposium and Workshop.

The third phase took place between Nov 20th 2008 – Feb 27th 2009 and run 7 workshops and training events at Košice, Szeged, Bratislava, Leuven, Warsaw, Prague and Budapest. Prior to these events the version 2.0 of the CASCADOSS LiveDVD was completed, see: and download at: <http://cascadoss.competterra.com/cascadoss.php?livedvd>

Project partners organized together 8 events. One in Benelux, one in Czech Republic, two in Slovakia, three in Hungary and one in Poland. In all countries there was a very strong interest recorded. In all countries number of participants was limited by capacity of computers laboratories for hands-on session.

There were 330 people participated representing Belgium, Czech Republic, Luxemburg, Poland, England, Germany, Hungary, France, Romania and Slovakia. Participants in all events declared strong interest in OSS. It means that the concept “open source” has gained currency within the involved geospatial communities.

An OSS GIS dedicated CASCADOSS web site is another important outcome of the project, e.g. on the Best Practice page several OSS GIS applications are presented.

4. LESSONS LEARNT

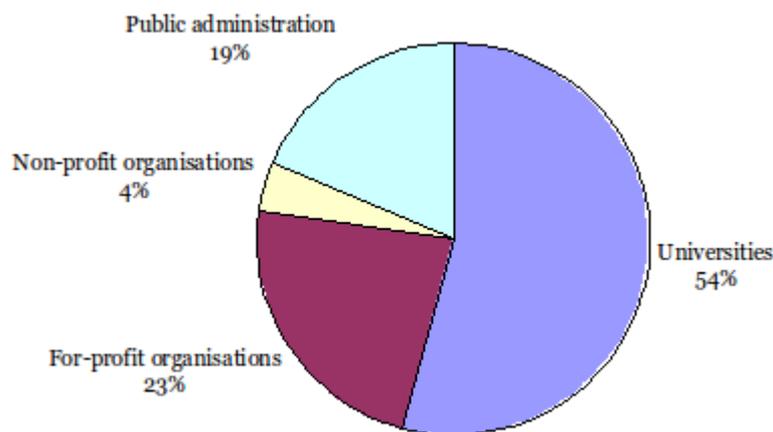
4.1. The cascade approach works

The feed back from participants was positive the find the obtained information useful. The project generated OSS GIS related discussions in the involved countries to put more emphasis on OSS GIS. The low-end users gained knowledge from the high-end users. The OSS GIS awareness of the involved and the geospatial society significantly improved.

4.2. The universities are important pillars of OSS GIS initiatives

Universities play special role in the OSS GIS world. Academies can run developments, e.g. Deegree was born at the university of Bonn, supporting the coordination of the community as it can be seen in the history of GRASS, and teaching OSS GIS related skills. Universities played special role in CASCADOSS project implementation, academic people actively participated at events and supported the distribution of project results.

Figure 3. Distribution of participants at the Hungarian workshop



Universities are open for new and innovative tools. As an impact of CASCADOSS the OSS GIS is getting to play more important part of university education. E.g. the University of Szeged did not provide OSS GIS related manual training for geographers and geinformatics students but by now there are five subjects utilising OSS tools such as Grass, QGIS, gvSIG, ILWIS, MapServer, GeoServer, Openlayers, Ganttproject.

4.3. The OSS GIS related innovation can be stimulated CASCADOSS-like projects

The CASCADOSS project in Hungary draw the intention of the geospatial community to the OSS. The earlier sporadic initiatives earned more attention even locally and national level. The Open GIS is gaining more part of conferences in Hungary. The ones who took part at CASCADOSS events are the most active in utilising OSS GIS and presenting their projects.

4.4 Outputs in languages is a success factor

The English is the common language in international projects so deliverables are developed and distributed in English. However special subjects, e.g. OSS GIS business models, licensing, software quality could be easier understood in national languages. The impact of similar project could be increased by translating documents and manual to local languages. E.g. Compet-Terra translated the study on Business Models to Hungarian while in other partners distributed the document in English. The translated version impacted people more and is frequently referred.

4.5 LiveDVD is practical tool

The CASCADOSS Live DVD was extensively used during the CASCADOSS events to demonstrate OSS software products in various PC environments without any preparation. The latest version was issued this April and still used by lecturers when the OSS GIS products are not pre installed in the training infrastructure.

4.6 Local OSS GIS communities

The localisation of OSS GIS means translation, support of local standards, e.g. projection, establishment of local community that supports other users. The need for local OSS GIS communities became clear from the beginning of the CASCADOSS project. In Hungary the HUNAGI is quite a strong organisation so it was obvious the OSS GIS community need to match to the HUNAGI provided framework. By this reason in 2009 a so called Hungarian CASCADOSS association was formed that entered to HUNAGI as a member. In this way the OSS GIS has equal opportunities to the vendors of proprietary software.

4.7 There is need for more OSS GIS training

CASCADOSS project developed some basic studies and some training manuals however a structured OSS GIS curricula and a set of manuals in local languages would help training centre, university programmes and self study.

5. A NEW INITIATIVE

The CASCADOSS project finished in 2009. The Hungarian CASCADOSS Association plans to extend the CASCADOSS message and knowledge in south-east Europe and build an innovation network in South East Europe. To achieve this plan, the most relevant Programme is the “The South East Europe Programme” of EU.

The South East Europe Programme aims to develop transnational partnerships on matters of strategic importance, in order to improve the territorial, economic and social integration process and to contribute to cohesion, stability and competitiveness of the region. The Programme Area includes 16 countries. For 14 countries the eligible area is the whole territory of the country, in 2 countries (Italy, Ukraine) only certain regions are eligible.

The Programme, the transnational cooperation concentrates on four different priority areas. The Hungarian CASCADOSS Association prefers to choose the first priority area (Facilitation of innovation and entrepreneurship - Develop technology and innovation networks in specific fields) and -as an expectant lead partner- is elaborating a detailed project proposal.

Application deadline is March, 2011. The Hungarian CASCADOSS Association is searching for project partners from the related countries like Macedonia, Serbia, Bulgaria, etc. Potential partners include universities, higher education institutions, research centres, scientific institutions, colleges, tertiary education institutions, regional and local development agencies focused on technology and innovation, national, regional and local authorities, chambers of commerce, collective business support actors, non governmental organizations / public like organizations.

6. LINKS AND REFERENCES

CASCADOSS websites: www.cascadoss.eu , <http://cascadoss.competterra.com>

CASCADOSS LiveDVD: http://www.cascadoss.eu/en/PDFs/D4.6_LiveDVD.pdf
http://cascadoss.competterra.com/cascadoss.php?livedvd_en

CASCADOSS at OSOR: <http://www.osor.eu/communities/gis/blog/the-cascadoss-project-has-successfully-completed>

CASCADOSS Association: http://cascadoss.competterra.com/cascadoss.php?home_en

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7. BIOGRAPHICAL NOTES OF THE AUTHORS



Ádám PODOLCSÁK is a director of consulting company, Compet-Terra Bt. . Mr PODOLCSÁK Ádám obtained degrees in land surveying, computer science with mathematics and real estate management that is in line with the multidisciplinary nature of GIS. He has extensive experience in implementing international projects in Hungary from both the side of the supplier and the recipient. He is a highly experienced land registration and cadastre specialist with specialisation in the management of information technology, computerised registers and communications. He is experienced in GIS/LIS related business analysis, conceptual design, procurement, project planning and quality assurance. At the University of Szeged he provides Management of LIS/GIS seminars for students specialised to geo-information.



Géza Péter JUHÁSZ is the president of the Hungarian CASCADOSS Association. He obtained MSC degree in Geography/GIS and Master of Business Administration. Studied and worked in Szeged in Hungary and mainly in the german-language areas. Nowadays he is working as a GIS team leader in Budapest. He has more than 5 five years experience directing and participating in geographic information projects and has special interest in the field of Open Source solutions.