

# **Open Source Software Release: A Guideline for the Publication of Software under the Open Source Status<sup>1</sup>**

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In the past few years, Open Source (OS) has become a topic for a far more heterogeneous community for both users and developers than it was before. Simultaneously, commercial aspects have gained a broad interest within the field of OS. More and more OS releases arise. Releasing sources under an OS license touches many different technical, legal, business and project management aspects. We developed a plan of procedure in the form of a workflow that involves all of these aspects. This plan will systemize the initial procedure of publishing software and gives decision support to everybody who deals with it. Our goal is to provide a checklist to expose potentially relevant questions at the right time and in a logical sequence.

## **1 Motivation**

### **1.1 The different lobbies**

In principle, an open source release comes into consideration for everyone who wants to publish their software. According to the original open source idea, first of all there are open source communities, whose members usually originate from private surrounding. Also this category of private users are “lone fighters”, who wants to make their source codes accessible to the public.

But possible candidates for the publication of software under the OS status are also software companies, using OS as a product accompanying strategy or to opening up a market for additional services. Finally, an OS release is feasible for software, which has emerged from research activities of public institutions (for example universities, research institutes).

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<sup>1</sup> A more detailed version of this paper is available on the Internet as a C-LAB Report at <http://www.c-lab.de>.

## **1.2 The different motivations**

There are different motivations to publish OS software. One intention for software companies is based on the consideration of making profit from additional business by distributing complementary services that directly connected to the software [HH03]; [Gr02]. Additional services to accompanying a software product are e.g. consulting-, configuration-, implementation- and compiling services as well as trainings, documentations and special Add-Ons that are offered under proprietary status. Another incentive for software companies to engage in OS in this way arises from their hope to enhance its competitive position when now offering the software free of charge.

A further motivation, especially for software companies, results from drawing benefit from Social Capital, an aspect that is discussed in the organizational theory [for more details see ORK02]. The idea here is that the commercial organization utilizes the assignment of an OS community for research and development activities.

Beside these more business concerned aspects, traditional reasons for choosing the OS way are still relevant, like the possibility to increase reputation or to be driven by intrinsic motives, success and research ambitions, or just technical interest [Mo00], [LT00]. These reasons apply to OS communities, and private persons, that engage in OS projects, as much as research institutes. Research institutes especially see on the one hand a possibility to disseminate the results of their research activities and on the other hand a possibility to open up a door for follow-up activities by observing the software in use after a research project. In doing so, they can also document their assignment for the public.

## **1.3 The different manufacturing levels of software**

The manufacturing level of the software to be released can range from a complete software product or just an add-on for a computer program to a program library or just a few lines of code. It is also possible to run the plan of procedure parallel to the development of an idea for a software code or line. Thus, software always stands in the focus of interest at a certain level of completeness or simply as an idea for programming it.

## **2 The Procedure of Initializing an OS-Release**

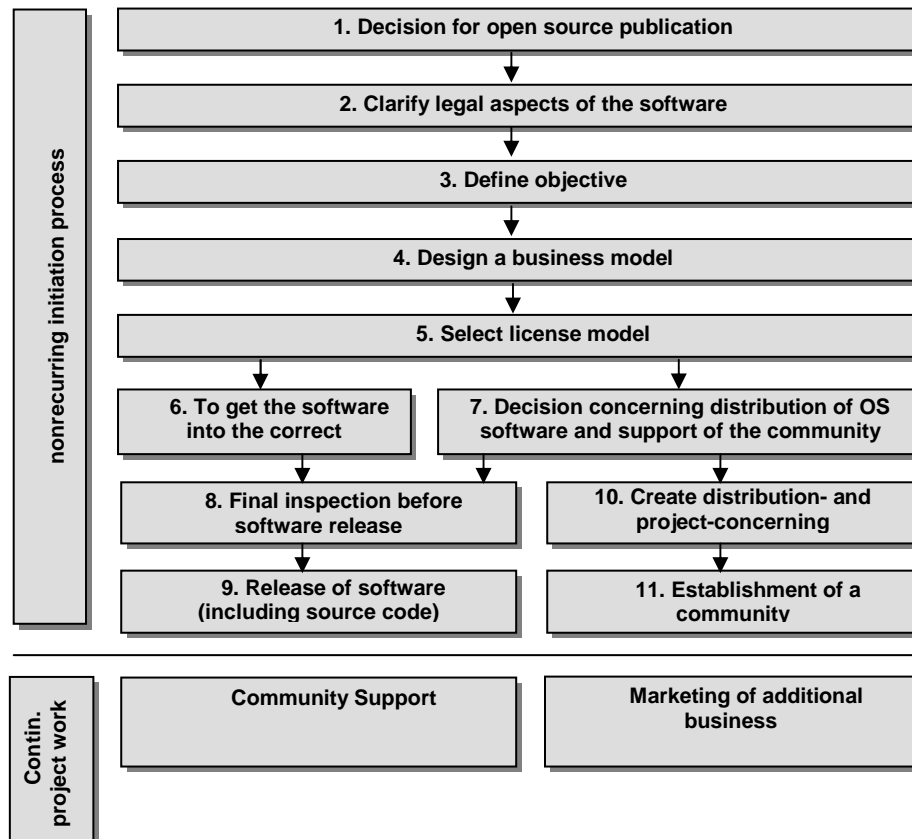
In general, when running an OS project appropriate preparations have to be arranged. These preparations can be organized systematically in several work steps. The resulting process of preparation can be seen as the actual OS software publication (compare figure 1), which finally results, depending on the aims of release, in a distinctive and long-term OS project of any size and complexity. Depending on the objective of the release, there is more work to do when the OS project enters its long term running phase. This work concerns the maintenance of the project, which unlike

the nonrecurring initiation process of preparation requires continuous effort (compare figure 1: community support and marketing of additional business).

This paper focuses on the aforementioned initiation process. The included worksteps therein are adequately introduced to its logic workflow. But the enumeration should not always be mistaken for sequential executing, some steps can be worked out in parallel like the illustration shows.

The intensity and necessity of editing every single working step depends on the objectives of release. So, some steps can be skipped according to previous decisions (e.g. step 4, if no commercial interests are involved).

The starting point of the process itself and each individual step does not strictly depend on the above mentioned manufacturing level of the software. Most of the steps, especially the first ones, can be passed through parallel to the manufacturing of the software and respectively to the formalization of the initial ideas for programming software.



**Figure 1:** Plan of procedure for an OS software

### **2.1 Step 1: Decision for Open Source Publication**

The first step of such a process is the fundamental decision whether or not underlying software should be transferred to the status of open source. The decision depends on the simple economical circumstance, where the overall predicted benefit in case of the OS-alternative could be higher than that of other alternatives [Ra99].

### **2.2 Step 2: Clarify Legal Aspects of the Software**

If the decision is made in favor of the OS-publication, the contractual and copyright aspects affecting the software have to be solved. Contractual and copyright aspects of the software always result from the relationship between the involved parties that want to publish the software under the OS status and a third party that can assert a legal claim (e.g. copyrights etc.) on the software.

### **2.3 Step 3: Define Objective**

The task of this step is to define and formulate the goals to be pursued with the OS-publication of the software. Goals serve as a kind of guideline for the OS-publication within which the process can be controlled and aligned as required. For all participants, goals give orientation for realizing the project.

### **2.4 Step 4: Design a Business Model**

This step refers specifically to the outlined objective of generating turnover by additional business or business opportunities. It only has to be carried out in the case when commercial interests are involved. The target of this step is to develop a business model for the additional business around the software. With this it is possible to generate specific sales volumes in future. This means that the additional business has to be specified according to the definition and planned in detail.

Finally, the business model should be implemented after completely running the initial process. The marketing of the additional services and goods requires a permanent effort, therefore it belongs to the continuous project work at the end of the initiation process (compare figure 1).

### **2.5 Step 5: Select the License Model**

After the specification of the OS strategy, the selection of a suitable OS license model can begin. The results of the preceding steps are the decision basis for choosing a license model. The aim of this step is to find a suitable license model for the OS software. The license model should be selected in such a way that it is helpful to the OS-strategy and of course adequate to the requirements of the OSI definition [OSD03].

## **2.6 Step 6: Get the Software into the Correct Formatting**

Open source software as well as their source codes should comply with certain formal requirements so that they are easily accessible and understandable for all possible users and programmers. The user friendly format of the software increases the probability of a broader user community. For instance, the source code should be transferred into an easily and quickly understandable format and analogous software documentations should be offered.

## **2.7 Step 7: Decision Concerning Distribution of OS Software and Support of the Community**

An aim of this process step is to make a decision about a self- or a foreign involvement concerning these two aspects. Should these tasks be fulfilled by the publishing institution itself or by a third party? The results of step one and three are essentially the information basis for this decision. Due to the logical operational sequence of the procedural model, this step can run parallel to the previous step 6.

## **2.8 Step 8: Final Inspection Before Software Release**

With this work step, it should be ensured before software is actually released that the processing of all preceding steps was carried out according to the target guidelines and in a correct manner. A monitoring process should be designed and take place in a methodical review. Detected failings from that review should be removed immediately.

## **2.9 Step 9: Release of the Software**

If the control process is finished and possible weak points and bugs have been identified and eliminated, the software can be released. In case of a 3<sup>rd</sup>-party distribution and community support, this means that the software, including the source code, can be handed over. If the result of step 7 is that the distribution and community support should take place in house, the responsibility for the distribution should start. The corresponding step 10 “Distribution and Projekt Managerial Prerequisites” should be fulfilled until then. Simultaneously to the release of the software, the foundation of a community should start (step 11).

## **2.10 Step 10: Create Distribution- and Project-Concerning Prerequisites**

In this step the corresponding prerequisites for the establishment of a community have to be created, if the decision is made in favour of self-distribution and in-house community support. The aim is to create a platform for the collaboration of the future

community members. For this, the Internet serves as an important medium [DBU03], [RL01]. In concret, a specific webpage should be installed and run.

### **2.11 Step 11: Establishment of the Community**

The task of this step is to establish an OS community. The focus of this work step lies in acquiring and motivating project members as much as in the structural organizing of the community. In favor of that, the tasks to do can be divided into organizational and personnel aspects.

## **3 Conclusion and further research**

Releasing software under OS licenses is a complex and multidisciplinary task. The scheme presented here is a first approach to list and organize the relevant decisions to be made. This has to be continued and further tested; checklists and best practices have to be assigned to the single steps in order to provide an improving base for potential publishers from different backgrounds. If the single steps of releasing software under the OS status are better understood by every involved persons OS software could be established for a more sustainable software process to an overall benefit.

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