

# Evaluation of Asana, Odoo, and ProjectLibre Project Management Tools using the OSSpal Methodology

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**Keywords:** Open Source Project Management Tools, Asana, Odoo, ProjectLibre, OSSpal.

**Abstract:** In order to successfully complete projects it is essential for companies to acquire a project management tool that assists in their planning, cost and resource management. Currently, there are several open source project management tools on the market that have much of the functionality required. Thus, it is important to choose the most appropriate one according to the needs of the user. To help with this choice, open source software evaluation methodologies can be used. In this paper, we use the OSSpal methodology to evaluate three popular open source project management tools: Asana, Odoo, and ProjectLibre.

## 1 INTRODUCTION

A project is a temporary effort undertaken to create a unique product, service or result (Project Management Institute, 2017). Managing a project involves managing costs, resources, risks, time, communication, quality, defining life cycles, and organizing the project.

The main reasons that cause a project to fail are poor time management and project costs. These failures lead to more and more companies looking for management tools in order to increase the percentage of success of their projects. However, some difficulties arise when it comes to evaluating and choosing the most appropriate tool for the company. Thus, it is important to apply a methodology of evaluation of project management software to help choose the tool.

The OSSpal methodology emerged as a successor to Business Readiness Rating (BRR) and aims to help companies find high-quality open source software.

There are already some works that apply this methodology to evaluate software and that served as basis for the application of the methodology to the chosen tools.

In this paper, were chosen three of the most used open source project management tools – Asana, Odoo

and ProjectLibre – to analyze and evaluate their characteristics.

The rest of this paper is organized as follows. Section 2 describes the three open source project management tools that will be evaluated. Section 3 describes the OSSpal methodology. In Section 4 the evaluation of the tools is done applying the OSSpal methodology. Finally, Section 5 presents the conclusions and future work.

## 2 OPEN SOURCE PROJECT MANAGEMENT TOOLS

Currently, there are many open source project management tools on the market due to the great need and demand. These tools have been improved over time with more and more features.

Based on the top 7 open source project management tools for agile teams (OpenProject, 2018) and the 21 Best Free Project Management Software Solutions for 2019 (Walker, 2018), three tools were chosen: Asana, Odoo, and ProjectLibre.

In this section, we describe each of the open source project management tools, their advantages and weaknesses.

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## 2.1 Asana

Asana (www.asana.pt) is a mobile and web application designed to simplify the management of teamwork, tasks and projects helping to organize, control and manage the project (Revisão de Asana, s.d.). It was developed in 2008 by Facebook co-founder Dustin Moskovitz and former Google and Facebook engineer Justin Rosenstein. The idea came from the need to improve the productivity of its employees. This tool allows teams to create projects, assign tasks to team members, specify deadlines, communicate tasks, generate progress monitoring reports, file attachments, calendars, etc.

Asana has undergone several changes since its launch and the Portuguese version was launched in February 2018. This application has integrations with other tools such as Gmail, Microsoft Outlook, Dropbox, Google Drive, among others.

The main advantages of this software are (Trello vs Asana: Comparison Of The Best Project Management Software, 2018):

- Allows segmentation and prioritization of projects;
- Allows to manage for each project its permissions;
- Customizable dashboards;
- It has a communication portal;
- Storage is secure;
- Simple and intuitive interface.

The main weaknesses of this software are:

- It is free for a limit of 15 users;
- The free version is limited in time;
- Does not allow us to specify task dependencies;
- Does not allow to create analysis charts such as Gantt charts or Pert charts;
- It does not allow to manage costs;
- Can not manage resources.

Figure 1 shows the interface of Asana.

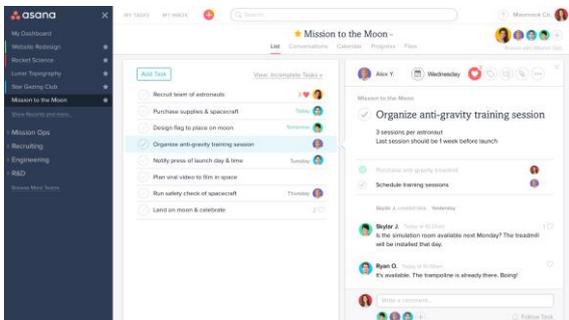


Figure 1: Interface of Asana (Asana, s.d.).

The main feature that distinguishes this tool is that it is possible to access mobile devices, that is, it is also available for Android or iOS. This tool is also very easy to integrate with other services

## 2.2 Odoo

The Odoo (www.odoo.com) is a project management software developed by Odoo SA (Advantages and disadvantages of Odoo development, 2017). This software allows to manage materials, manage sales and purchases, manage human resources, automate tasks, marketing and accounting. It supports several operating systems like Windows, Linux, Unix and Mac OS X and is an enterprise resource planning (ERP) solution with a CRM (Customer Relationship Management) system.

It is based on the MVC (Model-view-controller) architecture consisting of three layers: database, server and client. Figure 2 shows the architecture of Odoo.

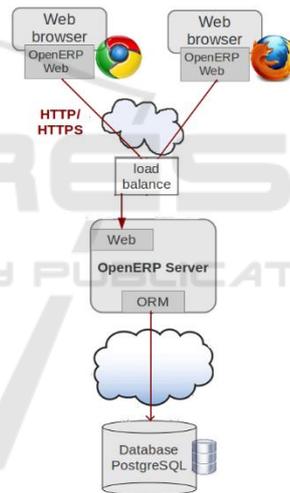


Figure 2: Architecture of Odoo (Odoo, s.d.).

The database used by Odoo is PostgreSQL. The server component is written in Python and the functionalities are organized into modules. A module defines the structure of data, forms, reports, procedures, etc., and contains files in Python and XML. The client component is also written in Python and the web client has distinct functionality in the interface.

The main advantages of this software are:

- Comprehensive software that addresses various business needs (project management, e-commerce, CRM, billing, accounting, etc.);
- Intuitive and easy-to-use interface;

- Easy page navigation and minimum viewing time;
- Being built by modules allows the user to choose the ones they really need to be able to add other modules late;
- Easy setup;
- Software is always up to date with advances in technology.

The main weaknesses of this software are:

- Incompatibilities with previous versions;
- Different documentation for different versions;
- Bug fix problems.

Figure 3 shows the interface of Odoo.

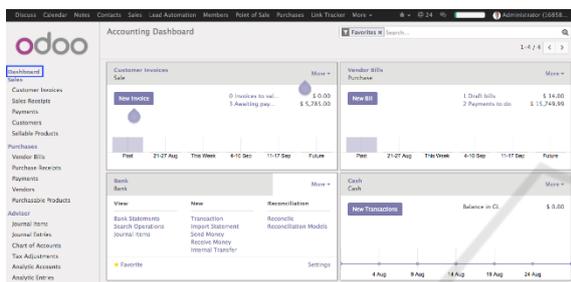


Figure 3: Interface of Odoo (Le, 2014).

The main characteristics that distinguish this tool are the fact that it has a large support community and it has a modular structure allowing to manage several business areas and not only project management, all with the same tool, without the need to include or acquire other tools for such purposes.

### 2.3 ProjectLibre

ProjectLibre ([www.projectlibre.com](http://www.projectlibre.com)) is a free open-source project management software (Santos, 2018). It was developed by Marc O'Brien and Laurent Chretienneau of Projity. In 2013, received the Best of Open Source Software Award from InfoWorld. This software allows controlling the project life cycle, managing resources, controlling costs, checking different perspectives between planned and realized, and analyzing the project at different times of its execution. This tool is better for small and medium-sized companies looking for a free alternative to Microsoft Project.

It is composed of the following distributions:

- ProjectLibre Project Management Software;
- ProjectLibre Server.

ProjectLibre is a program to manage projects at the desktop level, indicating when it is necessary to control projects individually while ProjectLibre

Server is a cloud solution, exclusively for managing corporate projects.

This tool is compatible with many versions of MS Project, supports several operating systems (Linux, Windows and Mac OS) and is used in more than 200 countries and is available in different languages.

ProjectLibre shows many functionalities such as managing costs, managing resources, managing tasks, drawing Gantt charts, drawing PERT charts, drawing charts of analytical frameworks, generating reports, printing, exporting to PDF and importing and exporting files to and from MS format Project.

The main advantages of this software are the following (Microsoft Project vs ProjectLibre, s.d.):

- It allows establishing milestones and planning the project schedule;
- It allows a good organization between several projects;
- The user interface is simple and intuitive;
- Allows rapid project planning.

The main weaknesses of this software are (Microsoft Project vs ProjectLibre, s.d.):

- Although the interface is simple, its design is weak and outdated;
- It does not allow you to simultaneously see all the next milestones of all projects for better management.

Figure 4 shows the interface of ProjectLibre.

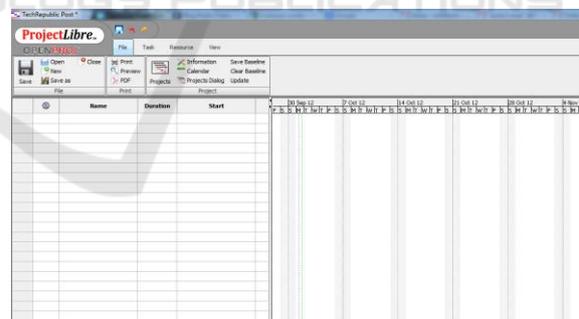


Figure 4: Interface of ProjectLibre (Kelly, 2012).

As we can see from Figure 4, that shows the ProjectLibre interface, it has four main tabs: File, Task, Resource and View.

In the File tab there are operations with the project file such as save, save as, open, create new project, close, print, export to PDF, calendars, information, project view, among others.

The Task tab includes operations that involve project activities/tasks such as insert, update, and delete tasks, insert and delete dependencies between

tasks, task information, resource distribution, task scheduling and annotation, among others.

Resource includes operations that involve project resources that allow, among other things, insert and delete resources, resource information, calendars and resource locations.

Lastly, in the View tab there are analytical vision of the project, of the tasks and of the resources such as view reports, subviews, and information filters.

### 3 OSSpal METHODOLOGY

OSSpal is a successor evaluation methodology to the Business Readiness Rating (BRR), whose objective is to help companies find high quality open source software, and that this need is increasingly present in the day-to-day business due to the large amount of tools available (Anthony I. Wasserman, 2017).

This methodology uses quantitative data that measures popularity to identify the most used tools and to select them as a starting point for the individual selection process (Marinheiro et al., 2015).

One of the improvements made from the BRR to OSSpal was the development of a website where users can assign classifications and revisions of projects (<http://osspal.org>).

This methodology combines categories of standard assessment processes (such as ISO / IEC 9126) and categories identified as important in evaluating software resulting from meetings with evaluators. There are seven evaluation areas:

- Functionality;
- Operational Software Characteristics;
- Support and Service;
- Documentation;
- Software Technology Attributes;
- Community and Adoption;
- Development Process.

The implementation of this methodology is composed of 4 phases:

1. Quick Assessment Filter: Identification of the components of the software to be analysed, measuring each component in relation to the evaluation criteria.
2. Target Usage Assessment: Allocation of weights to categories and measures.
3. Data collection and Processing: Gather data for each metric used in each category rating, and calculate the applied weighting for each metric, at a level of 1 (unacceptable) to 5 (excellent).

4. Data Translation: Use category ratings and the functional orientation weighting to calculate the OSSpal final score.

The "Functionality" category is evaluated differently from the rest. This classification is obtained by comparing characteristics of the evaluated component with a set of standard features necessary for an average use (Leite, Pedrosa, & Bernardino, 2018).

The following steps must be followed:

- a) Assign score to each of the characteristics to analyze being 1 - less important and 3 - very important.
- b) Classify the characteristics cumulatively (1 to 3).
- c) Standardize the previous result for a scale of 1 to 5.
- d) Standardization shall be carried out in accordance with the following scheme:
  - Under 65% = 1 (unacceptable)
  - Between 65% and 80% = 2 (bad)
  - Between 80% and 90% = 3 (acceptable)
  - Between 90% and 96% = 4 (very good)
  - Greater than 96% = 5 (excellent)

### 4 EVALUATION

As previously mentioned, to apply the OSSpal methodology first it is necessary to assign weights for each of the evaluation categories, in a total 100%, as shown in Table 1.

Table 1: Weights assigned to each category.

Category	Weight
Functionality	30%
Operational Software Characteristics	25%
Documentation	15%
Support and Service	10%
Software Technology Attributes	10%
Community and Adoption	5%
Development Process	5%
<b>Total</b>	<b>100%</b>

Since the "Functionality" category evaluates aspects such as how well the software will meet the user's

average requirements, this category has been given the highest percentage (30%). Next comes the "Operational Software Characteristics" category with a weight of 25%, the second most important because it evaluates factors such as how secure the software is, how good the user interface is, how easy it is to install and configure software, among others. With weights of 15% and 10%, the categories of "Documentation" and "Support and Service" follow, since they are very important to guide users in the use of the software.

The category "Software Technology Attributes" was given a weight of 10%, and finally, the two categories with the lowest weight (5%) are "Community and Adoption" and "Development Process".

Next, the characteristics that are intended to be analyzed in the category of "Functionality" are defined. These characteristics were chosen based on the functionalities intended by the average of users and a weight was assigned to each one, as shown in Table 2.

Table 2: Weights assigned to each feature in the Functionality category.

Feature	Weight
Management of multiple projects	3
Task list	3
Reports	3
Costs management	3
Resource management	3
File sharing	2
Calendar	2
Task dependency	2
Qualitative risk analysis	1
<b>Total</b>	<b>22</b>

The next step will be to evaluate each tool on a scale of 1 to 5, as previously mentioned. However, for the "Functionality" category this scale is calculated differently, as shown in Table 3.

The three tools were evaluated with the maximum score in the characteristics of management of multiple projects, task list and resource management since all present functionalities for these ends. In the case of reports and cost management, the Asana tool was evaluated with 0 points since it does not have these

functionalities. This tool also obtained 0 points in task dependency and in the qualitative risk analysis.

Table 3: Functionality score.

Feature	Asana	Odoo	ProjectLibre
Management of multiple projects	3	3	3
Task list	3	3	3
Reports	0	3	3
Costs management	0	3	3
Resource management	3	3	3
File sharing	2	2	0
Calendar	2	2	2
Task dependency	0	2	2
Qualitative risk analysis	0	0	0
Cumulative sum	13	21	19
Normalization to scale 1-5	59%	95.5%	86%
	1	4	3

ProjectLibre had zero score in file sharing and qualitative risk analysis while Odoo scored only 0 on the qualitative risk analysis and none of the tools studied had this feature.

Thus, the remaining categories are also evaluated on a scale of 1-5 to be able to calculate the final assessment, shown in Table 4.

The final result is calculated considering the weights shown in Table 1.

The Functionality calculation was presented in Table 3. For the category Operational software characteristics ProjectLibre obtained the lowest score since it has an outdated interface with an outdated design. This tool also got the worst score in the category of Support and Service and Development Process because it is a tool that has no updates since 2015.

As shown in Table 4, the tool with the best evaluation is Odoo with a final score of 4.4 out of 5.

Table 4: Final score.

Category	Asana	Odoo	ProjectLibre
Functionality	1	4	3
Operational Software Characteristics	5	5	4
Documentation	4	4	4
Support and Service	4	4	3
Software Technology Attributes	4	5	4
Community and Adoption	4	4	4
Development Process	5	5	4
<b>Final score</b>	<b>3.4</b>	<b>4.4</b>	<b>3.6</b>

## 5 PRACTICAL EVALUATION

After some use of the ProjectLibre tool, it is possible to make an assessment of the user's point of view about the features and characteristics of this software.

Starting with the functionality category, this tool allows the management of multiple projects however we can only consult information related to one project at a time, that is, only one project can be open. It presents a detailed list of tasks being possible to define sub-tasks, assign a responsible person to each task and even define a specific schedule for a given task. The reports that we can generate are very simple and we can't choose what we want to report, that is the reports are divided according to the tabs of the software and you can only print information about the current tab. In terms of costs, it has some cost management indicators related to the project. It has several features of resource management, and it is possible to define in the resource table which type of resource, cost per use, which is its work schedule, among others. It has no file sharing or communication functionality with other team members. In terms of calendar has many functionalities being possible to choose 3 types of system calendar or to elaborate a specific calendar for the project, to define specific calendars for each task or for each resource.

Moving to the Operational Software Characteristics category, ProjectLibre presents an interface with an old and outdated design.

There are some documents on the use of this software as well as tutorials. The support and service are not very complete and there is no Help functionality.

It has tools and basic management features but it is not suitable software for large companies or large projects, and only the manager can control the entire project.

This tool is most commonly used to be similar to MS Project and has a large community. The last version of this software was released in 2015 and since then there have been no significant updates to the tool.

## 6 CONCLUSIONS AND FUTURE WORK

In this paper, the OSSpal methodology was applied to evaluate three open-source tools for managing projects. To be able to apply this methodology it was necessary to gather information about each one of the tools and understand the user experience.

The application of an evaluation methodology allows us to make a better comparison between tools and realize at what points is it this stands out.

After applying the methodology it's verified that the tool with the best evaluation is Odoo, being who scored higher on both the evaluation of the functionality as in the total categories.

So, the overall conclusion is that this tool presents more features and, in general, it is simpler to work with than the other two tools.

As future work, we intend to apply other methodologies of evaluation of open source software and evaluate the best tool in a real environment.

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