WFYI Project Management Pipeline Tool

EPICS Fall 2014

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Introduction

WFYI Public Media, Indianapolis' PBS and NPR member station, is in need of a system to act as a central collection point and tracking tool for the varied types of work and projects we do. These projects vary from community events attended by as many as 60,000 people to a TV program broadcast premiere. Currently, WFYI has a wide range of ways to keep track of projects. Some personnel use something as sophisticated as applications on their computers, while others tools as simple as sticky notes.

This project management tool will be used by the IT department at WFYI with hopes that it will later expand to other departments. The EPICS Team at Butler University assisted in finding a tool that met their requirements and assisted in developing those requirements. The team consisted of Eric Sanders, Tanaka Mapondera, and Jon Thennette. The overall approach the team took was to schedule regular meetings to further develop the requirements as well as research various tools to present to WFYI.

The report is organized into six chapters. The first chapter outlines the requirements. This includes a brief overview of the initial requirements as well as additional requirements that were decided upon through interviews and meetings. The second chapter gives a brief overview of the possible solutions. Chapter three gives an overview of our open source solutions. Chapter four gives an overview of a different solution which is an application called AVA. Chapter five describes how we chose the final solution. Chapter six explains the future work that needs to be done.

Requirements

Project Management Tool Requested Requirements/Components

The Project Management Tool should have the following major components:

- Information collection/management interface
- A display interface to show projects in various formats
- Task assignment and completion tracking for specific components of a project
- Project reporting components

For further explanation of these requirements/components see the Project Management Pipeline Tool Requirements in the appendix section

Further Requirements

Through further meetings and coordination, the EPICS Team was able to develop further requirements for the Project Management Tool. The EPICS Team met with WFYI three times throughout the semester. We met October 1st, November 12th, and November 19th. Through these meetings we added the following to our list of requirements:

- WFYI does not want to purchase a tool
- WFYI owns Microsoft SharePoint and would like to use it more
- WFYI has tried using Microsoft Project but felt it was too cumbersome
- WFYI is open to using an open source project
- WFYI is open to having future teams develop the tool
- WFYI has no immediate deadline for this tool
- WFYI wants to use it for the IT department but expand to other departments at a later time
- Project Management at WFYI is not currently organized
 - Some people use applications, others use pencil and paper
- WFYI would like for the tool to connect to Microsoft Outlook

Solutions Overview

After gathering the initial requirements, the EPICS team explored various tools for Project Management. The following is a list of solutions for the Project Management Tool.

- AVA Project Management Application
- OpenProject
- LibrePlan
- ProjectLibre
- EPICS Team builds the application

Each of these solutions were explored and presented to the WFYI department during a meeting. From that meeting we concluded that the best course was for WFYI to use AVA. In the next chapters, we will explore some of the other solutions in depth.

Open Source Solutions

OpenProject

OpenProject was one of the solutions that we explored. OpenProject is a web-based software application intended for project collaboration and is the open source competitor to Microsoft Project. It meets all of the requirements given to us by WFYI. It allows for Information Collection by having various users with various roles create projects, tasks, and much more. It allows the user to display tasks and projects in various formats such as a list view and a calendar. OpenProject has completion tracking as well as the tardiness for a task or project.

While OpenProject meets all of the requirements given to us by WFYI, it is very difficult to navigate and use. This application would require a dedicated server to run on as well as multiple briefing and training sessions.

ProjectLibre

ProjectLibre is an easy to use project management application. It is open source and is a free download. Installation is easy and does not require a dedicated server to run on. It meets many of the requirements given to us by WFYI. A user can easily create and open projects as well as tasks. ProjectLibre also has a calendar feature as well as a feature to display duration and cost. ProjectLibre shows a lot of promise and is still being actively developed. However, there are some concerns that make it a non-contender for the WFYI Project Management Tool.

While ProjectLibre does show much promise, it currently is intended for a single user. There is no apparent way for ProjectLibre to connect with other people. This would mean that projects and tasks could not be shared throughout the IT department. Because of this, it does not meet our requirements.

LibrePlan

LibrePlan is a collaborative tool to help plan, monitor and control various projects. LibrePlan is a free open source program. It has a rich web interface and provides real time planning. Users are able to create projects and use its elaborate gantt chart in a graphical and intuitive way. Users are able to track the hours devoted to a project as well as measure the progress of a project. In addition, they can also calculate the cost of a project. Users have the ability to monitor and adapt projects in a natural way due to LibrePlan's collaborative, web

based, and multi-project approach. Information between employees, customers, and other companies can be easily shared.

LibrePlan satisfies all of the requirements. It has many components, and is actively developed. However, the tool is not lightweight. The many components help satisfy the requirements, but there are also many components not required for WFYI's Project Management Tool. The tool is complicated and would require numerous hours of training before use. The tool would also require a dedicated server to run on.

AVA Project Management Application

AVA Project Management Application is an application within Microsoft SharePoint. Through our further interviews, meetings, and emails we learned that WFYI would prefer to use SharePoint more, and that an application within SharePoint would be preferred. Therefore AVA, being an application within SharePoint, is very beneficial. In addition, it also meets the major requirements/components. The following sections describe the roles of AVA, how AVA meets the specified requirements, and cases where AVA does not meet the requirements or is limited.

AVA Roles

AVA allows for three roles, an IT-Engineer, a Project Manager, and an Engineer. An IT-Engineer is the top level and they are responsible for the administrative side of AVA. They can create projects as well as assign project managers, and assign engineers to projects. In addition to this, they can also create and edit tasks as well as upload documents. They also manage the user roles of every use. The second role is the Project Manager. The Project Manager is very similar to IT-Engineer. They can edit projects, but cannot create a project. They can create and edit tasks as well as upload documents. The Engineer is the lowest level. The Engineer can edit the completion percentage of a task and can view documents.

These roles are very limiting to how WFYI would like to use AVA. It would be more convenient if AVA allowed for a more flexible role system in which the users of the product could define the roles.

Information Collection/Management Interface

As a tool with an information collection/management interface, AVA is able to:

- Create projects with descriptions and other key pieces
- Assign ownership to a project as well as other roles
- Upload documents and other artifacts
- Create tasks for a project

However, AVA is also limited in the following ways:

- Not everyone can upload a document as specified in the requirements
- Task flexibility is limited

Display Interface to Show Projects in Various Formats

As a tool that allows a display interface to show projects in various formats, AVA has a:

- Breakdown of projects and tasks on the homepage or on the reports page
- List view calendar on the homepage
- Full calendar that offers a view of every task for any given project in a month view
 - Also can link to the full task information

AVA nearly meets all of the requirements for this major component; however, it cannot link to the full project information from the calendar. It can only link to the task information.

Task Assignment and Completion Tracking for Specific Components of a Project

As a tool that allows for task assignment and completion tracking for specific components of a project, AVA is able to:

- Assign Project Managers
- Assign Engineers to a project
- Assign Engineers to a task
- Keep record of task and project completion

However, AVA is limited in the fact that it cannot send a notification to Project Managers or Engineers. This requirement was decided upon after meetings and interviews.

Project Reporting Components

As a tool with project reporting components, AVA is able to report on:

- The completion percentage of a project
- The Engineers for a project

However, AVA is limited with its reporting. There are very few metrics it reports. There is also a defect in the reporting. The defect is in the task reports. It currently shows a breakdown of the tasks based on their importance; however, the report does not show anything. Once more than 10 tasks are added, the task report page shows the metrics in an incorrect order.

AVA Conclusion

AVA is a good fit as WFYI's Project Management Tool. It does not meet all the requirements, but it does have the major components. What makes AVA a good choice is that it is lightweight, easy to use, requires little training, is a SharePoint application, and is free. However, it also has a few negative components. AVA's user roles provide very little flexibility, there is little documentation on the application, it has not been widely used or reviewed, and it is still the first version of the application which could mean it is not being actively developed.

Choosing the Tool for the Job

After meeting with the IT department at WFYI, the IT department and EPICS team came to an agreement on the right tool for the job. We felt that AVA, while not satisfying all requirements, contained the major components for the Project Management Tool. AVA was ultimately chosen because it is light weight, easy to use, meets the major components, is free, and is a SharePoint application. The open source projects had many more features to them, but they would require more training and more resources. Therefore, they were dismissed as candidates. Having the EPIC's team build the application was also dismissed because of the length of time it would take to build the application.

Future Work

There is still future work to be done with AVA. The EPICS team will visit the WFYI station to give a brief demonstration AVA as well as a brief training course. There will also need to be more testing done on AVA as the EPICS team did not fully test AVA. The WFYI team will also have to setup SharePoint accounts and AVA user roles to help manage the projects. Lastly, projects and tasks will need to begin being migrated to AVA.

[10-6-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [10-6-2014]

I. RED FLAGS:

➤ Having no access to Microsoft SharePoint would be problematic. Not having access to it would mean that we could not properly evaluate the product.

II. ISSUES:

- > The team was recently formed with the addition of Eric.
- ➤ Chris Bowman, our WFYI contact, did not respond to e-mails for over a week due to an issue with a spam filter.

III. ACCOMPLISHMENTS (dates):

10-1-2014

- Met with Chris Bowman for an initial meeting.
- Requirements were clarified.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Get Microsoft SharePoint running on a local machine (Eric)
- Review open source projects (Team)

[10-13-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [10-13-2014]

I. RED FLAGS:

II. ISSUES:

➤ We still do not have access to Microsoft SharePoint, however, Chris has been contacted about it and he is attempting to resolve this issue by giving us a copy to use on WFYI's server.

III. ACCOMPLISHMENTS (dates):

10-8-2014

• Contacted Chris to get a copy of Microsoft SharePoint. He will respond later in the week.

10-10-2014

- The following open source projects were assigned:
 - o ProjectLibre: Eric
 - o LibrePlan: Tanaka
 - o OpenProject: JT
- Small report for each project is expected.

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Take action depending on Chris's response.
- ProjectLibre (Eric)
- LibrePlan (Tanaka)
- OpenProject (JT)
- Assign new open source projects if needed.

[10-20-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [10-20-2014]

I. RED FLAGS:

II. ISSUES:

III. ACCOMPLISHMENTS (dates):

10-17-2014

• Chris Bowman was able to give us access to Microsoft SharePoint to use. It is set up the WFYI Microsoft 365 server. We are able to access it remotely.

10-19-2014

• Open Source Project Reports were given.

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Access Microsoft SharePoint
- Become familiar with SharePoint
- Do use-case scenarios in SharePoint
- Set up an appointment with Chris

[10-27-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [10-27-2014]

I. RED FLAGS:

II. ISSUES:

III. ACCOMPLISHMENTS (dates):

10-22-2014

• Set up a time to meet with Chris to discuss the open source projects and SharePoint.

10-24-2014

• SharePoint was assigned to the team along with a tutorial to follow for Project Management.

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Meet and discuss SharePoint
- Do use-case scenarios in SharePoint

[11-3-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [11-3-2014]

- I. RED FLAGS:
- II. ISSUES:

III. ACCOMPLISHMENTS (dates):

10-29-2014

- The team met to go over SharePoint. During this meeting, we found two possible applications that can be used within SharePoint:
 - o AVA Project Management App
 - Velocity Project Management

11-3-2014

• Setup an appointment to meet with Chris to discuss our recent work with SharePoint at the WFYI Station.

IV. ACTION ITEMS FOR FOLLOWING WEEK:

• Meet with Chris

[11-10-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [11-10-2014]

I. RED FLAGS:

II. ISSUES:

There was a mix up on the date of our meeting. This has been resolved and the meeting date and time confirmed.

III. ACCOMPLISHMENTS (dates):

11-5-2014

• The team reviewed OpenProject and placed it as our lead candidate for a project management tool.

IV. ACTION ITEMS FOR FOLLOWING WEEK:

• Meet with Chris on 11/13/2014 and decide on a project tool

[11-17-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [11-17-2014]

I. RED FLAGS:

II. ISSUES:

➤ The EPICS team did not have full access to SharePoint which prohibited us from fully using AVA Project Management Tool in SharePoint.

III. ACCOMPLISHMENTS (dates):

11-12-2014

• The EPICS team met with Chris Bowman and members of his department to discuss the project management tools. We decided to focus our efforts on SharePoint.

11-13-2014

• A meeting for 11/19/2014 was confirmed. We will discuss getting SharePoint set up for a project management tool.

IV. ACTION ITEMS FOR FOLLOWING WEEK:

• Meet with Chris on 11/19/2014 and got necessary privileges for AVA.

[12-1-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [12-1-2014]

- I. RED FLAGS:
- II. ISSUES:
- **III.** ACCOMPLISHMENTS (dates):

11-19-2014

- The EPICS team began to explore AVA with the new permissions
- <u>*NOTE*</u> Less work was done over Thanksgiving Break

IV. ACTION ITEMS FOR FOLLOWING WEEK:

- Implement use cases for AVA
- Contact Chris above future of the Project Management Tool

[12-8-2014]

TO: Dr. Panos Linos FROM: Eric Sanders

SUBJECT: Status report for week [12-8-2014]

- I. RED FLAGS:
- II. ISSUES:

III. ACCOMPLISHMENTS (dates):

12-3-2014

• The EPICS Team contacted Obi (Director of IT at WFYI) for additional WFYI SharePoint accounts to further test AVA.

12-5-2014

- Wine Fest Project added to SharePoint along with tasks for the project.
- EPICS team began to work on final presentation.

12-8-2014

• The EPICS Team was granted two additional SharePoint accounts for further testing.

IV. ACTION ITEMS FOR FOLLOWING WEEK:

[10/19/2014]

TO: Eric FROM: Tanaka

SUBJECT: Report for LibrePlan

I. POSITIVES:

- Does a good job of tracking and displaying the progress of a particular project
- > Can display the various tasks assigned to a project
- > Modern design
- > Web-based
- ➤ Allows for administrators as well as team workers who are assigned to a project
- > Easily share data within or between companies
- > Built in reporting for tasks and projects
- ➤ Let's you keep track of your resources and lets you dictate how you like to distribute them

II. RED FLAGS:

- Confusing to set up
- > Require training.
- ➤ Has features that are unnecessary

III. FINAL THOUGHTS:

LibrePlan has many positives and a few good qualities but would require some work to get it set up. It would also require training

IV. PROMISING (Yes/No/Other):

> Yes

OpenProject

[10/19/2014]

TO: Eric FROM: JT

SUBJECT: Report for OpenProject

I. POSITIVES:

- ➤ Allows for "Assignee" and for "Manager"
- > Shows completion percentage
- > Shows a budget for how much was spent
- ➤ Hierarchical structure for users
- > Can set up meetings through the program
- > Shows "related" work packages

II. RED FLAGS:

- > Still in development
- **≻** Complex

III. FINAL THOUGHTS:

> This application could be promising, but it needs to be explored more.

IV. PROMISING (Yes/No/Other):

> Yes

ProjectLibre

[10/17/2014]

TO: Eric FROM: Eric

SUBJECT: Report for ProjectLibre

I. POSITIVES:

- Easy to use
- **East to install**
- > Easily create and open projects
- > Create Manager for projects
- > Has a calendar feature
- > Features such as duration and cost.

II. RED FLAGS:

- ➤ No clear way to stay connected with other users
- > Use for a single user, not a team
- > No way to add users to a project
- > Does not meet out requirements

III. FINAL THOUGHTS:

> This application does not meet our requirements and therefore should not be explored.

IV. PROMISING (Yes/No/Other):

> No

WFYI Project Pipeline Tool

Notes following initial meeting with WFYI Contact, Chris Bowman.

- Don't want to purchase any software
- Own SharePoint
- Open to using open source project (modified/unmodified)
- Open to developing the project
- No deadline
- Want to use it for the IT department and eventually the entire building
- Project management is currently a mess
- Doesn't have to be web-based

Meeting Outline November 12th

Agenda:

- 1. Objective
- 2. Solutions
 - a. EPICS team build from ground up
 - b. Use Open Source Project
 - i. LibrePlan
 - ii. OpenProject
 - c. Use SharePoint
 - i. AVA Project Management App
- 3. Tools
 - a. SharePoint
 - i. AVA Project Management Tool
 - 1. Strengths
 - a. Already in place
 - b. Options to expand
 - 2. Issues
 - a. Not able to currently use the application
 - b. OpenProject
 - i. Strengths
 - 1. Meets the objective
 - 2. Easy to add users with privileges
 - 3. Web based
 - ii. Weaknesses
 - 1. Not currently in place
 - 2. Includes many features that are out of the scope of the objective
 - c. LibrePlan
 - i. Strengths
 - 1. Meets the objective
 - 2. Web based
 - ii. Weaknesses
 - 1. Not currently in place
 - 2. Difficult to set up
- 4. Conclusion
 - a. The tool to target
 - b. Use cases
- 5. Questions/Discussion

Objective: A system that will act as a central collection point and tracking tool for the varied types of work and projects done at WFYI.

Features List for the System:

- 1. Information Collection/Management Interface
- 2. Display interface to show projects in various formats
- 3. Task assignment and completion tracking for specific components of a project
- 4. Project reporting components

Meeting Outline November 17th, 2014

- 1. Introduction (Chirs B.)
- 2. Project Pipeline Tool Introduction (Chris B.)
- 3. WFYI Director of IT (Obi)
 - a. SharePoint Experience thus far
 - i. What SharePoint has been used for
 - b. Current plans for SharePoint
 - i. Requested SharePoint uses
 - c. Current status/work being done
- 4. EPICS (EPICS team)
 - a. SharePoint Experience thus far
 - i. Research re-cap
 - ii. Have been able to do _____
 - iii. Haven't been able to do _____
- 5. Needs for Project Pipeline tool (all)
 - a. Active Directory/Exchange connection?
 - b. MS Project setup/installation?
 - c. EPICS user(s) rights change?
 - i. Security for rest of WFYI network...
- 6. Next Steps? (all)

WFYI Project Pipeline Tool

EPICS FALL 2014

WFYI EPICS TEAM

- Eric Sanders
 - Team Leader
 - Senior
 - Music Performance (Percussion)
 - Software Engineering
- Tanaka Mapondera
 - Team Member
 - Sophomore
 - Computer Science
- Jon Hennette (JT)
 - Team Member
 - Senior
 - Computer Engineering

WFYI

- Indiana's largest PBS and NPR member station.
- Mission:
 - To inspire the best in our community by sharing stories and connecting people
- EPIC's Team Contact
 - Chris Bowman
 - WFYI Internet Projects Manager

Initial Requirements

- Project Management Pipeline Tool
 - Information Collection/Management Interface
 - Display interface to show projects in various formats
 - Task assignment and completion tracking for specific components of a project
 - Project reporting components

Further Requirements

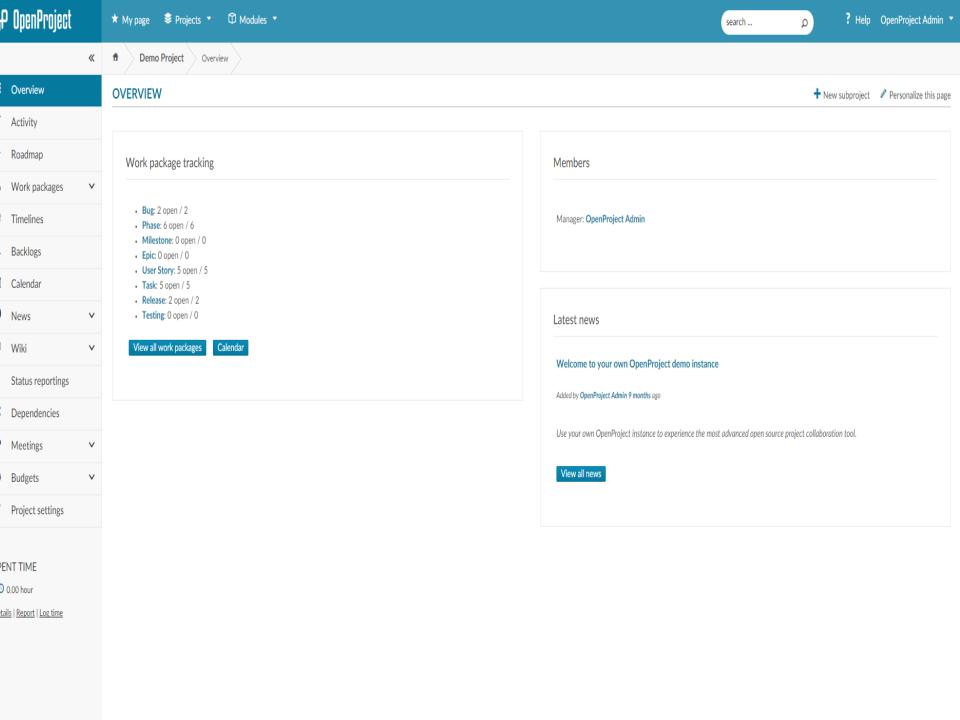
- Requirements gained through interviews
 - No Cost
 - Own Microsoft SharePoint
 - Tried Microsoft Project but was too complex
 - Open to using an open source project
 - Open to developing the project
 - No Immediate deadline
 - Want to use it for the IT department but expand later on
 - Project management is not currently organized
 - Connect to outlook

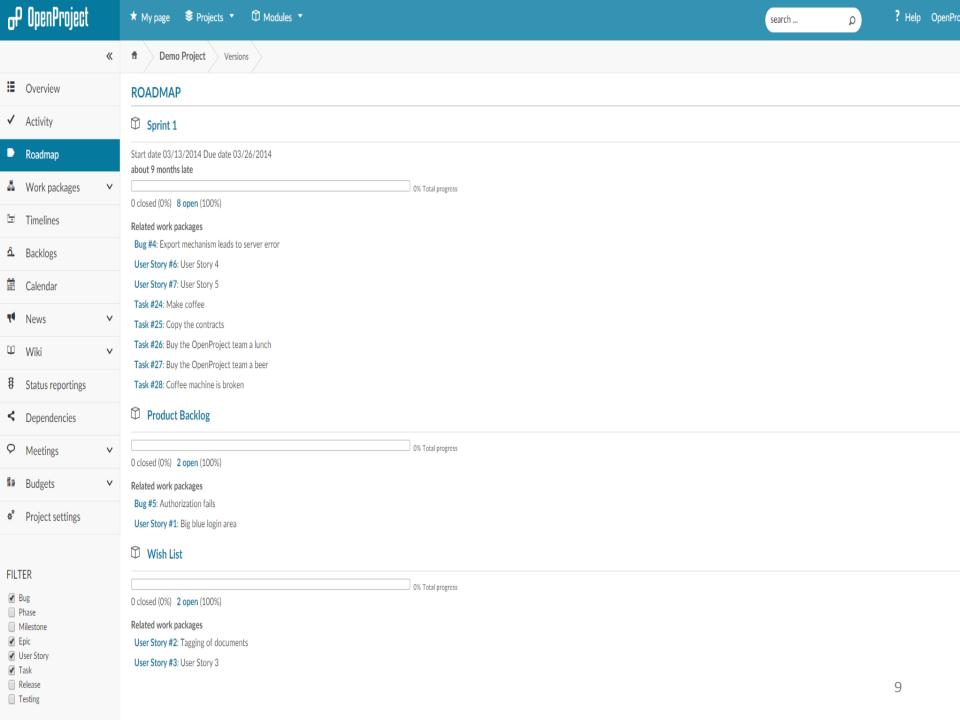
Solutions

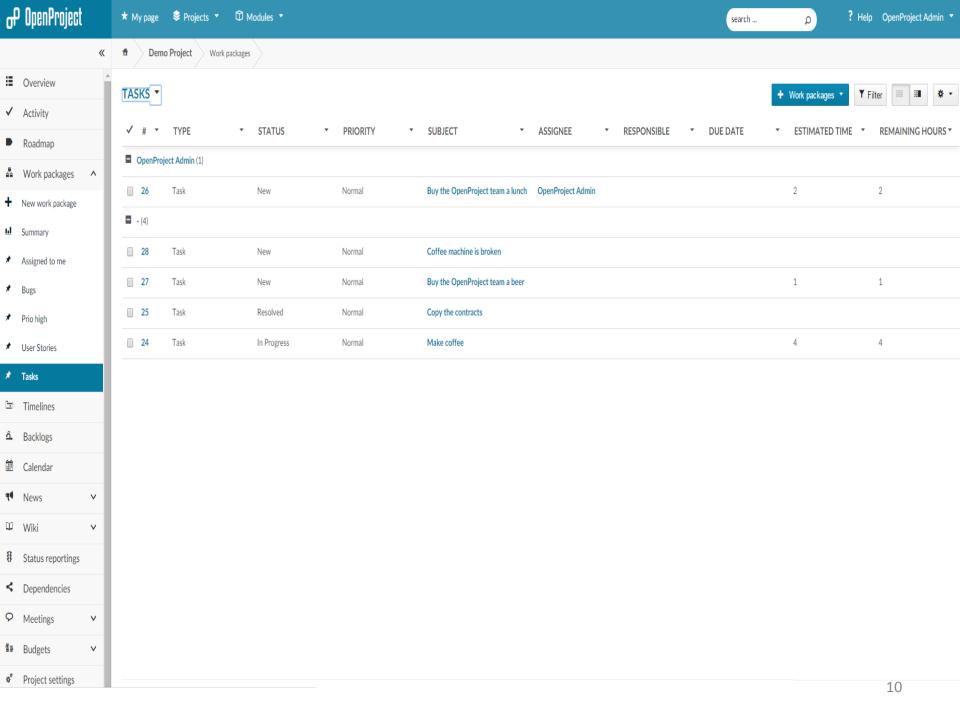
- SharePoint (Web Application Framework)
 - AVA Project Management Application
- Open Source
 - OpenProject JT
 - LibrePlan Tanaka
- EPIC's Team builds SharePoint Application

OpenProject

- Open Source
- Microsoft Project competitor
- Widely used
- Actively developed







OpenProject Conclusions

• Pros

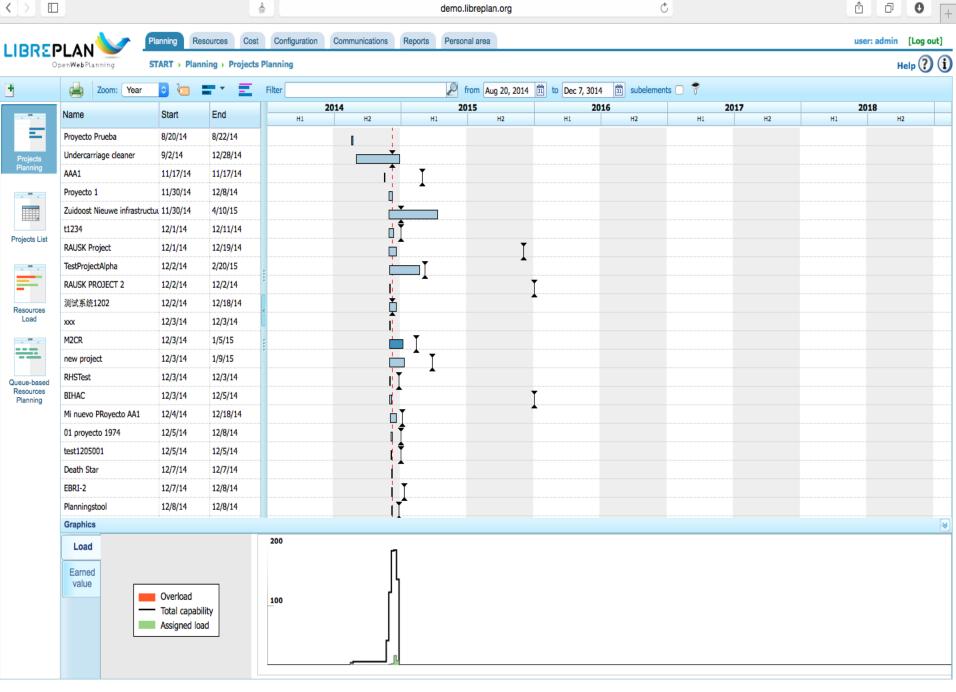
- Free
- Hierarchical structure for users
- Can set up meetings through the program
- Meets requirements given by WFYI

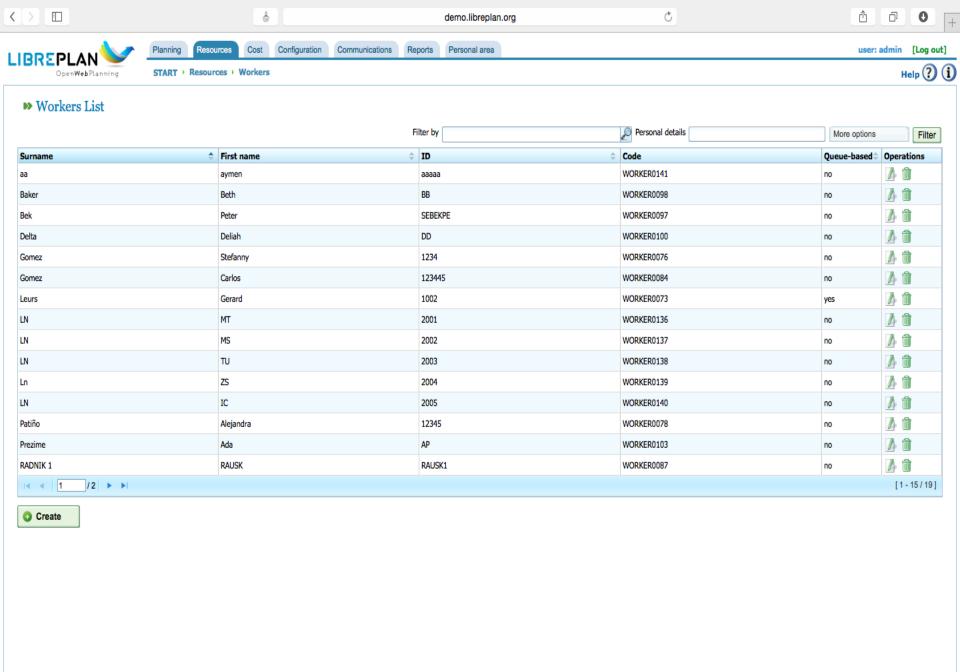
Cons

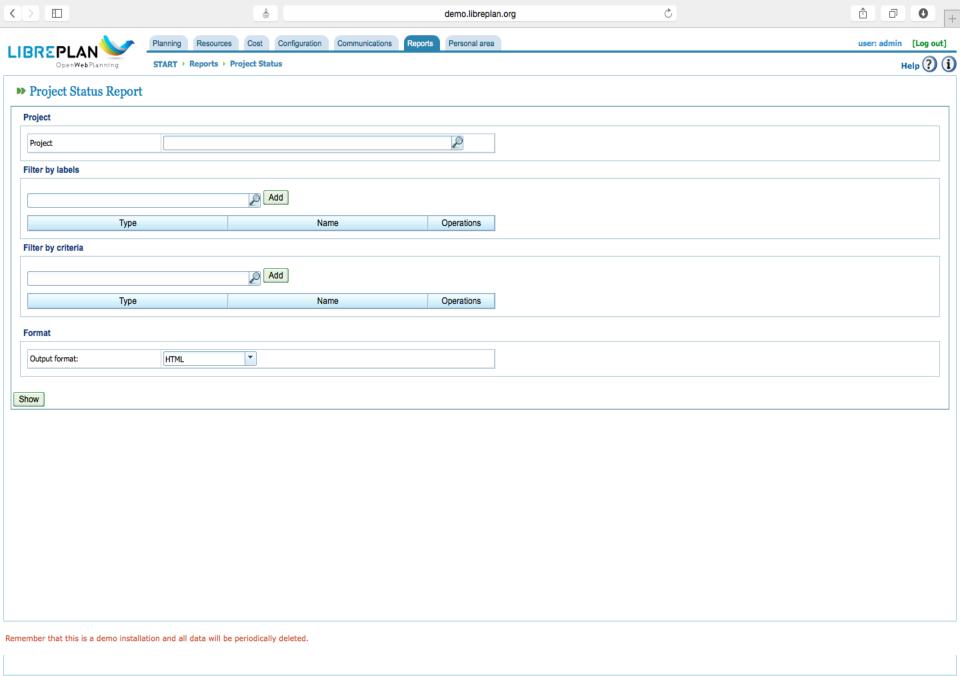
- Would require training
- Very complex

LibrePlan

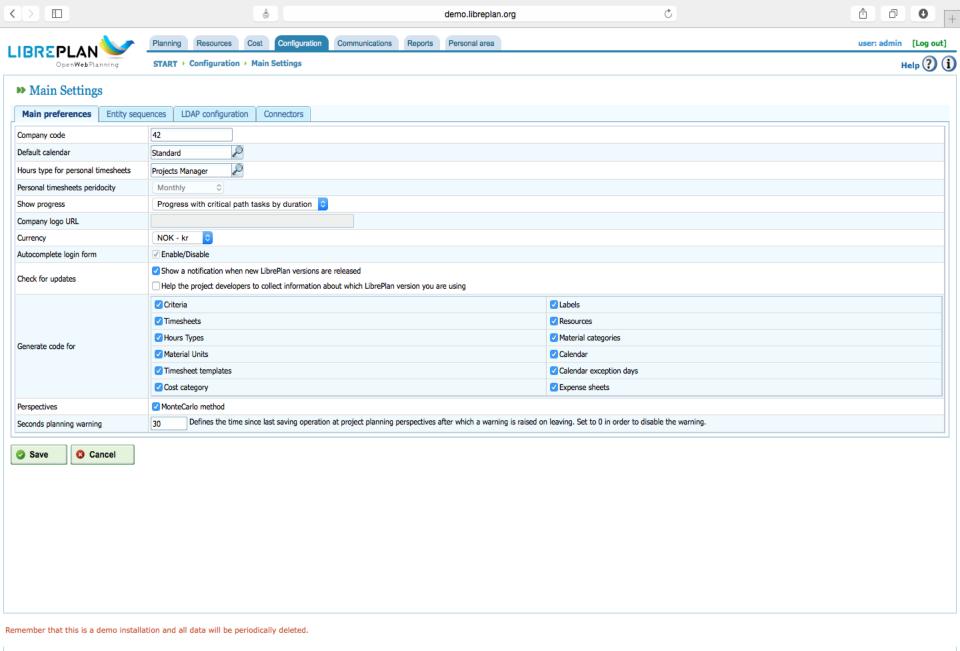
- Web Based Project Management Program/Software
- Plan
- Manage Resources
- Track Data
- Monitor & Control
- Connect
- And More



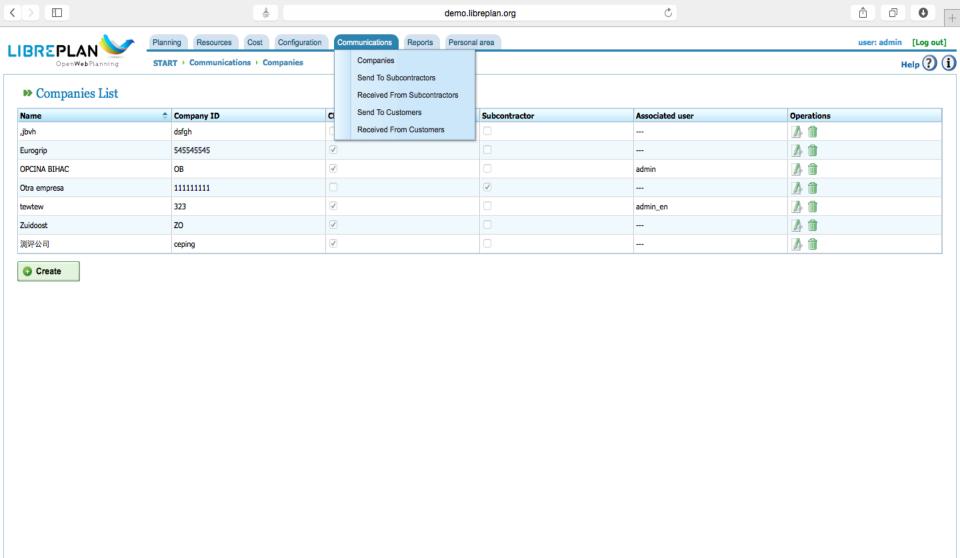




Remember that this is a demo installation and all data will be periodically deleted.



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Remember that this is a demo installation and all data will be periodically deleted.

LibrePlan Conclusions

Pros

- It more than satisfied all the requirements that were given to us by WFYI
- Its free

Cons

- Too many components
- Very complicated to setup and operate
- Would need a server to run on

AVA Project Management Application

- SharePoint Application
- Create Projects
- Create Tasks
- Various Views
- Reports
 - Task and/or Project completion percentage
- User roles

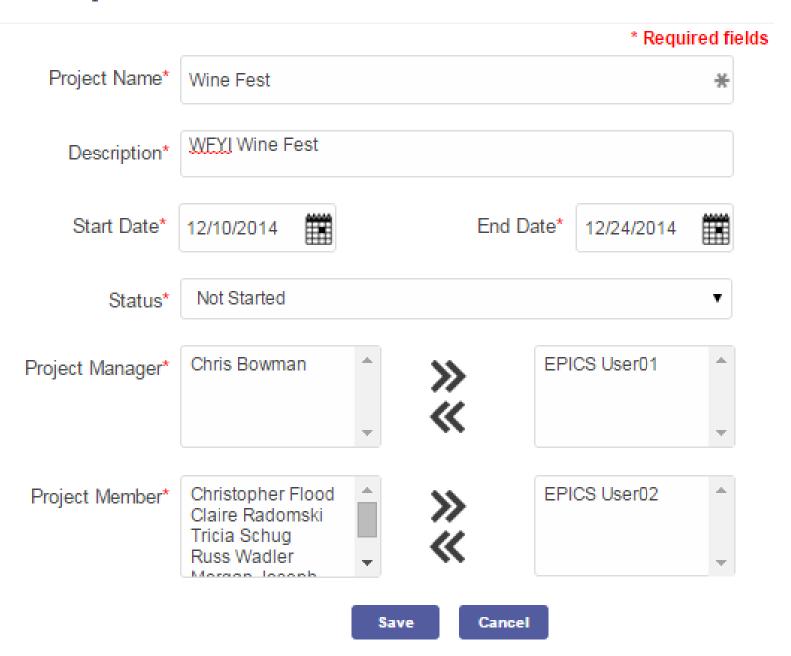
AVA Roles

- IT-Engineer
 - Top Level
 - Create Projects
 - Assign Project Manager
 - Assign Engineer
 - Create/Edit Tasks
 - Upload Documents
- Project Manager
 - Create/Edit Tasks
 - Edit Projects
 - Limited
 - Can change Engineers assigned
 - Upload Documents
- Engineer
 - Edit Tasks
 - · Limited
 - View Documents

- Information Collection/Management Interface
 - Pros:
 - Able to create projects with descriptions and other key pieces
 - Able to assign ownership to a project
 - Able to upload documents and other artifacts
 - Able to create tasks for a project
 - Cons
 - Not everyone can upload a document as specified in the requirements
 - Task flexibility is limited

Add Project





- Task assignment and completion tracking for specific components of a project
 - Pros
 - Project Managers can be assigned to a project as a manager of a project
 - Engineers can be assigned to a project
 - Engineers can be assigned to a task
 - Completion tracking
 - Cons
 - No notification to Project Managers or Engineers available



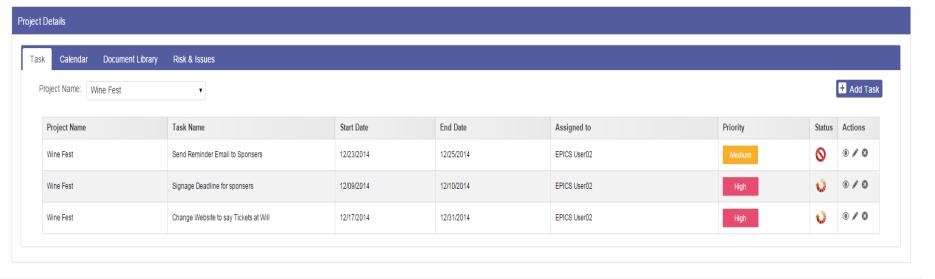










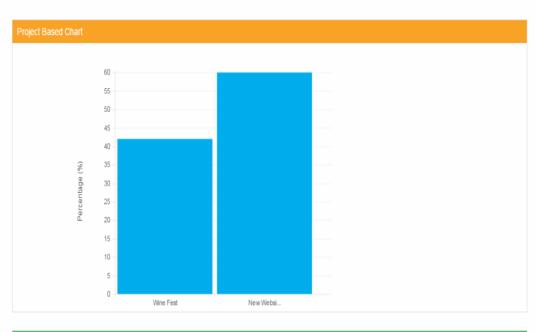


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- Display interface to show projects in various formats
 - Pros
 - Home page shows basic break down of projects and tasks
 - Task completion
 - Project completion
 - Home page contains a list view calendar
 - Full calendar offers a view of every task for any given project in a month view
 - Offers linking to full task information

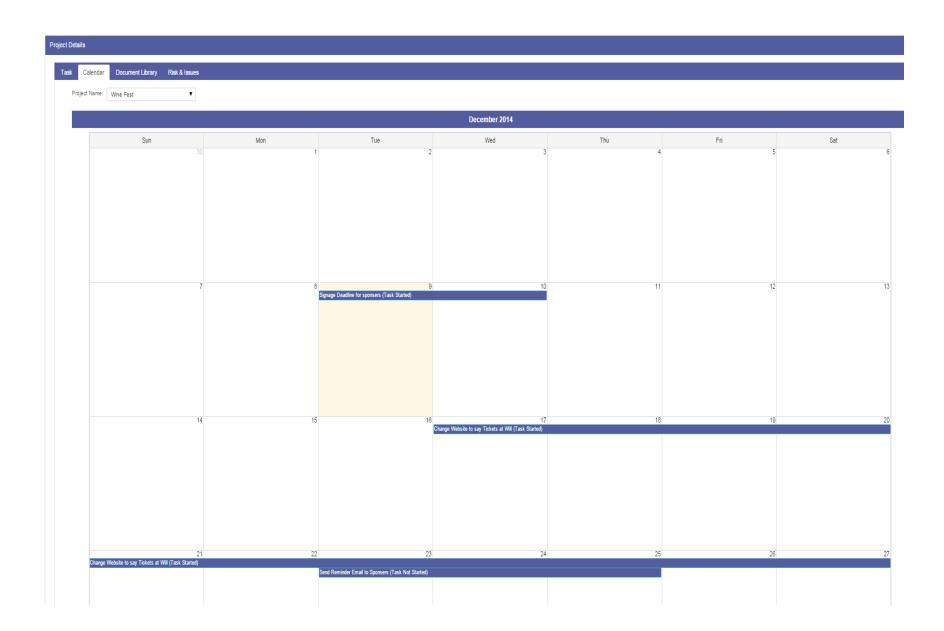


Calendar	
Dec 26	New Website Launch Homepage
Dec 23	Wine Fest Send Reminder Email to Sponsers
Dec 09	Wine Fest Signage Deadline for sponsers
Dec 17	Wine Fest Change Website to say Tickets at Will





Task						
Project Name	Task Name	Start Date	End Date	Assigned to	Priority	Status
New Website	Launch Homepage	12/26/2014	12/31/2014	EPICS User02	High	O
Wine Fest	Send Reminder Em ail to Sponsers	12/23/2014	12/25/2014	EPICS User02	Medium	0
Wine Fest	Signage Deadline fo r sponsers	12/09/2014	12/10/2014	EPICS User02	High	O
Wine Fest	Change Website to s ay Tickets at Will	12/17/2014	12/31/2014	EPICS User02	High	O
					Vi	iew All



- Project reporting components
 - Pros
 - Allows for reports on
 - Projects
 - Members
 - Cons
 - Limited reporting
 - Task reporting has a defect









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AVA Conclusions

• Pro's

- Lightweight
- Easy to use
- Little to no training needed
- SharePoint Application
- Free

Con's

- User role's provide little flexibility
- Little documentation
- Not widely used/reviewed
- First version (v 1.0)

Project Management Solutions

- LibrePlan
- OpenProject
- AVA
- EPIC's Team

Why AVA

- Light weight
- Easy To Use
- Meets high level requirements
- Free
- SharePoint Application

Future Work

- Train
- Setup Accounts
- Further Testing
- Migrate Projects/Tasks

Experience

- We were able to focus on other aspects of software engineering (requirements)
- Real world experience
- Importance of interviews and meetings
- Learned to be proactive when needing assistance