Software Project Management Plan

Design Build and Enrich Knowledgebase Based on Machine Learning
Sponsored by DXC Technology
Chandra Kamalakantha

Jonathan Lawrence
Jeremiah Ramilo
Jacob Wilson

ABSTRACT

The purpose of this project is to provide DXC Technology with a product that their employees can use to search knowledge bases according to a client submitted ticket. An important part of this project is to provide proper documentation for the product, such as references and guides. This documentation can be used by DXC Technology to better understand the product after delivery, and can be used by DXC to ensure that their product requirements have been met. This documentation will necessarily include the tools used and the people involved in the product's creation. The constraints of this project require that the waterfall life cycle be used and that is discussed at length further in this report. Like all projects, this one is not without its risks, for example the team has little experience with practical software development and every member is enrolled in university full time. Hardware and software resources include tools such as Python for development and Github for version control will be used with other tools being employed as necessary. This project is under a tight schedule with all important dates spelled out clearly in this document. Monitoring and reporting are important for any project, and weekly reports will be used to keep track of this project's progress. Finally, professional standards have been laid out clearly so all group members know what is expected of them during the course of this project. Overall, this will be an interesting and instructional project that will hopefully benefit all involved.

INTRODUCTION

This plan for the DXC Technology project defines the purpose and goals of the project and includes an overview of the deliverables and deadlines involved. It is a must these days for service providers to support multiple cloud providers and a multitude of ITSM suites such as and not limited to ServiceNow, SalesForce, JIRA, etc. And because of this, there will be many of clients submitting support tickets. As a result, there is a need for a service to streamline the process of DXC support employees to find a specific ticket and find a corresponding knowledgebase article to go along with it. The goal of the DXC Technology project is to help the client in the development of an enriched knowledge base search tool. Our team consists of: Jonathan Lawrence, Jeremiah Ramilo, and Jacob Wilson, as team members, and Chandra Kamalakantha as the team mentor and coordinator.

PROJECT OVERVIEW

In the DXC Technology project, a service has to be provided that allows DXC support employees to search knowledgebase articles based on a specific ticket (submitted by a client) and find suitable knowledgebase articles based on the service ticket to resolve the issues. Our goal is to create a search service and improve their search by enriching the knowledgebase learning model and/or enrich the keywords search. The service will be created with Python, and should be well documented and extendable.

PURPOSE AND SCOPE

The purpose of this plan is to provide an overview, guide, and reference for each stage of the project and make sure that all requirements are met on time and as specified by the client. This plan will include the major structure, activities, resources, schedules, and milestones for developing the system.

STRUCTURE

This plan contains the main components of a project management plan and is structured as such. Including an overview of the project, those involved in the project, tactics and tools, project schedule, and standards.

PROJECT ORGANIZATION

Team Members
- Jonathan Lawrence - Team Leader
- Jeremiah Ramilo
- Jacob Wilson

Jonathan has had the most experience with professional software engineering and will be the team leader for the project. The team leader will be responsible for coordinating team meetings, updates, communications, and submitting team deliverables. Overall, it will be the responsibility of the entire team to be involved with each phase of the project.

LIFE-CYCLE MODEL USED

We will be using the waterfall model for this project. The waterfall model has a very sequential structure which will be of great advantage to our timeline. This is because we can work backwards from our deadline and divide certain periods of time for each stage of the model. This will ensure a well designed and tested system. Furthermore, this project will be a learning experience for all team members and will require collaborative work to accomplish the goal. The waterfall model will allow for the team to be in sync as we collaboratively work on requirements, design, implementation, etc.

RISK ANALYSIS

As with any project, there can be a number of associated risks in its execution that may affect the effort required for its delivery. Some of the possible risks include that:
- The team has limited practical experience on the subject of machine learning and artificial intelligence. Although the team have all been exposed to these concepts through coursework and lectures, we lack the hands-on knowledge of developing and

training learning machines. The team can mitigate this risk by prioritizing tasks correctly, discussing with the team for guidance, and starting tasks early to allow for ample time to produce the necessary deliverables.

- The team is working remotely from the project sponsor. As both parties have unpredictable schedules and limited windows of time for meeting, it may be difficult to correspond with one another. To mitigate the risk, the team will plan to meet virtually on most Fridays at 1:00 PM. If another meeting time is necessary, the team should discuss and set aside time for a makeup meeting. If a makeup meeting is not possible, team members are responsible to report updates on the status of their work on the project by email to all members. To report updates on progress, direct the email to the team leader and CC all other team members.
- The team has a high workload for the current semester. As college seniors, we are all finishing up our final courses in hopes to graduate soon. The stress and difficulty with managing our various responsibilities may potentially act as a hindrance. To help manage the workload, any team member can request help on any portion of the project they do not understand. Moreover, we will use GitHub's built-in Kanban board to manage tracking the progression and assignment of tasks.

HARDWARE AND SOFTWARE RESOURCE REQUIREMENTS

- Postman for RESTful web service development
- Visual Code or Atom for Python development
- ServiceNow for knowledge base test data
- RabbitMQ for messaging framework
- GitHub for version control
- GitHub Kanban board for task management
- Cloudcraft for architectural diagrams

DELIVERABLES AND SCHEDULE

Project Management Plan	Friday, September 6th, 2019
Requirements Documentation	Friday, September 20th, 2019
Architecture Documentation	Friday, October 4th, 2019
Detailed Design Documentation	Friday, October 25th, 2019
Testing Plan	Friday, November 11th, 2019
Final Project Registration	Thursday, December 5th, 2019
Final Project Report	Friday, December 6th, 2019

Weekly Meetings with Sponsor	Fridays at 1:00 PM
Makeup Meetings with Sponsor	Upon discussion, if weekly meeting not possible

Any portion of the project that a group member is responsible for should be completed **by 10:00 AM on the due date**. If any group member is not able to meet that deadline, alert other group members as soon as possible. The sooner everyone is alerted, the more efficiently we can address the issue.

MONITORING, REPORTING, AND CONTROLLING MECHANISMS

Monitoring, reporting, and control mechanisms are very important to any project, and this is even more true for a project that includes several members and will span several months. Management reports should be produced weekly and include progress towards next deliverable, events of the weekly group meeting, and any problems that need to be addressed by the group. Project monitoring and version control will be done through Github. The rationale for using detailed weekly reports and Github is to provide the group with an easy way to monitor project progress, and to allow for the easy management of different branches of the project while it is in development.

PROFESSIONAL STANDARDS

Since our group is working with a professional organization we must maintain a high standard of conduct throughout the entire project. Scholastic dishonesty will not be tolerated in our group, and if it occurs will be immediately reported to the professor. Meetings will occur once weekly on Fridays at one in the afternoon with attendance being mandatory for all members. If someone cannot attend they should alert the group as soon as possible so arrangements can be made for them or the meeting can be rescheduled. All deliverables need to be of a high quality that would be acceptable in a professional setting. It should be clear that deliverables had effort put into them and were not rushed through at the last minute. The rationale for these standards is to allow for the successful completion of the project to our sponsor's satisfaction.

REFERENCES

N/A

APPENDIX A

GUIDELINE

1. On the first occurrence of unacceptable behavior, determine the circumstances involved, resolve the problem, and document the event in the meeting minutes.
2. On a second occurrence, notify the instructor of the problem. A meeting will be set up to evaluate the situation and resolve the problem.
3. On a third occurrence, again notify the instructor of the problem. A meeting will be set up to evaluate the situation and resolve the problem. At this point, the team will have the option of removing the team member. If removed, then the team member receives a pro-rated grade based on the number of weeks they have participated in the group.
4. Examples of unacceptable behavior may include not delivering on time, delivering poor quality work, missing team meetings, being unprepared for team meetings, disrespectful or rude behavior, etc. Reasons such as "too busy" or "I forgot", or "my dog ate my design model" are unacceptable.
5. Valid reasons that must be considered include those listed for obtaining an incomplete standing in a course (illness, death in the family, travel for business or academic reasons, etc.)