

Project Plan

1 Group member Contribution:

Name	Idea Creation	Report Writing
GOPI KRISHNA DEVULAPALLY	25%	25%
KRISHNA CHAITANYA KONDURU	25%	25%
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RUTHWIK CHINTA	25%	25%

Table 1: Team member's Contribution

2 Introduction

2.1 Scope:

The product we develop is designed to provide a solution for dog owners who are working professionals and often cannot find enough time for their Dog Walk activity. The main objective of this portal is to help dog owner, find a volunteer who meets their needs (i.e. Facilitating Dog Owner in Dog Walk Activity). This also helps volunteer find a job to make an earning. We provide a registration for both dog owners and volunteers through which they could exercise the services offered. Mapping dog owners with volunteers, payment services, tracking your dog are the Core services we offer through this web portal. A detailed description of all services offered is given in features section. We plan to complete this project in 16 weeks.

2.2 Goals and Objectives

- **Goal:**
 - To help dog owners find a volunteer for their dog when they are busy and to help volunteers make an earning.
- **Objectives:**
 - Design a web portal which provides interface for both owners and volunteers to interact.
 - Provide options for dog owners to search for volunteers who meet their requirements (experienced volunteers, volunteers in nearby locations, needed services).
 - Provide a reliable payment gateway for dog owners and volunteers to make transactions through our portal.
 - Continuously gather customer feedback to ensure the developed product meets their requirements.

2.3 Project Deliverables:

- Web Portal (Software Product which is hosted Online)
- Project Plan : Describes how the project is taken over by the team, mainly deals with Work Breakdown Structure (WBS), Assumptions, Risk Plan and Quality Criteria

2.4 Assumptions:

- Project Management Assumptions:

ID	Description:
PM1:	PRINCE 2 was used as Project Management Methodology.
PM2:	Every person in the Team is considered to have enough knowledge in PRINCE 2 Project Management

	Methodology.
PM3:	Every person in the team had his/her contribution for different processes in Project Management Processes.

Table 2: Project Management Assumptions

- Effort Assumptions:

ID	Description:
E1:	All the team members are involved in estimating effort for this project.
E2:	The estimated effort is considered to be effective estimates for managing the project and these estimates will be refined at every stage of the project.
E3:	The refined effort estimates are also considered to be effective for managing the project and produce the deliverables

Table 3: Effort Assumptions

- Schedule Assumptions:

ID	Description:
S1:	All the team members are involved in scheduling the project.
S2:	Scheduled project dates are considered to be effective in delivering the project and deliverables

Table 4: Schedule Assumptions

- Technology Assumptions:

ID	Description:
T1:	It is assumed that every technology adopted in the development activity has no major changes to it in recent times.
T2:	It is also assumed that every person in the team has good knowledge of Technologies which are adopted for the completion of different Development tasks.

Table 5: Technology Assumptions

- Market Assumptions:

ID	Description:
M1:	It is assumed that there exists a target market for the services generated by this project (1 st release).
M2:	Automatically this target market will help in generating cash-flows.

Table 6: Market Assumptions

- Outsourcing Services Assumptions:

ID	Description:
O1:	The supplier for a particular feature in our services is considered to be trusted
O2:	It is assumed that there is no breaching or failures to accepted Service Level Agreements (SLA).

Table 7: Outsourcing Services Assumptions

3 Features

ID For Dog Owners

- FD1: Registration and Login**
FD2: Create a Profile
FD3: Choose type of Subscription (Monthly, Weekly, Hourly): type of service needed for the dog owner
FD4: Choose type of pickup: Option to select the type of pick up for their dog
FD5: Track the dog using Google maps: Helps to

ID For Volunteers

- FV1: Registration and Login**
FV2: Create and get verified profile
FV3: Choose type of Service (Monthly, Weekly, Hourly): Type of service they provide in dog walking
FV4: Track the total distance in dog walks: Helps the dog volunteers to track total distance they have done in dog walking activity
FV5: Notifications about Work: alerts provided to

- track the dog
- FD6: Online Payment Via PayPal:** Option to pay online to Volunteers
- FD7: Browse through list of available volunteers:** Displays the list of volunteers who fits in the criteria of Dog Owner Details.
- FD8: Ratings and Feedback:** Here the customer has the opportunity to give feedback and rating to the Dog Volunteer.
- dog volunteers when have been selected by the dog owner

4 Appropriate Life Cycle

We are planning to develop our product by following LEAN STARTUP methodology proposed by Ries. Since we are a start-up and only have a primary hypothesis in our business model canvas, we chose this methodology; since this model enables validated learning, where we get to refine our hypothesis into facts through customer interaction. Soon after the preparation of a business model canvas which encloses our own hypothesis, we approach a subset of our potential customers (As per the assumption **M1**) to gain their feedback about every segment in the canvas. We plan to design experiments and run tests to get customer feedback. So we plan to develop Minimum Viable Product (MVP) which is used to elicit customer feedback. Analysing these feedback, the primary hypotheses are periodically aligned into facts to obtain a refined canvas.

In this regard we propose to choose Evolutionary Prototyping Model as our life cycle development model. To be compatible with our chosen LEAN STARTUP methodology we picked this lifecycle model. This model facilitates iterative development with constant customer feedback after the iteration. The phases of this are requirements elicitation, design, implementation, testing and evaluation. After the completion of iteration a prototype is developed which serves as a MVP to obtain customer feedback. After the evaluation phase, feedback of customer helps to revise requirements which are to be implemented in the next iteration. This model avoids risk of developing a product that does not meet customer needs. The type of prototype we plan to develop is horizontal which means all the core features will be implemented but not to full extent. This model also favours when there are small developing teams and scope is very large.

The operational plan is as follows: we are planning to develop our product in 16 weeks. We planned to deploy the final product after the completion of 2nd iteration. Each iteration is scheduled to be for 7 weeks. All the above mentioned phases will be carried out in an iteration. 1st week is allocated for project management activities and last week for deployment and release, but that doesn't state that project will run without the project manager it only states that initial activities for the project which are basically, related to Project Management are done in the 1st week.

Upfront there are certain known requirements but these are to be refined. These requirements will be refined after every iteration. Even though we had certain known requirements Water-fall was not considered, since Water-fall model is heavy-weight process models which contains lot of documentation and doesn't favour in producing MVP, hence we haven't choose this process model. Agile practices such as SCRUM and XP, wherein iterative and incremental development takes place can be an alternative lifecycle model for this project. But, since team has no experience or much knowledge in agile methodology, we prefer not to choose agile practices.

5 Stakeholders

We have analysed there are three types of Stakeholders to this project viz. Internal to Project team, External to Project Team but within the same organization and External to both Project Team and Organization.

- Internal to Project Team: Includes development team and project manager

ID	Names	Description
DT	Developing team	The team involved designing, developing, testing the System and

		collecting the feedback from customer experiments.
PM	Project Manager	Coordinates the whole team in different activities and will be responsible person for the project.

Table 7: Internal to Project Team Stakeholders

- External to Project Team but within the same organization: Includes different stakeholders who are outside the project team but assist in different processes related to project.

ID	Names	Description
CE	Customers Representatives who are involved in experiments	Customers or Customer Representatives who involve in customer experiments, and provide feedback or suggestions to the prototypes.

Table 9: External to Project Team Stakeholders

- External to both Project Team and Organization: Includes customers (or end users) or sponsors who will be benefitted from the project, also includes different suppliers of services to the project also.

ID	Names	Description
I	Investors (Banks)	Sponsors who actually sponsors this project
DO	Dog Owners	One of the end-user for the system which is developed in this project
DV	Dog Volunteers	One of the end-user for the system which is developed in this project
GS	Google Services	Supplier for the feature FD5
PS	Payment Services	Supplier for the feature FD6
SP	Dedicated Server Hosting Providers	Server Supplier or Contractor who helps in hosting the Web Portal .

Table 10: External to Organization Stakeholders

Potential Influences of each stakeholder is presented in the Figure1 which actually depicts the Stakeholder Influence Matrix, where each entry is made using the ID's of each Stakeholder. The vertical axis represents the intensity of power a stakeholder could have on the project. The horizontal axis represents the amount of interest a stakeholder could have on the project. So each stakeholder entry is given certain preference in relation to the project based on the Matrix.

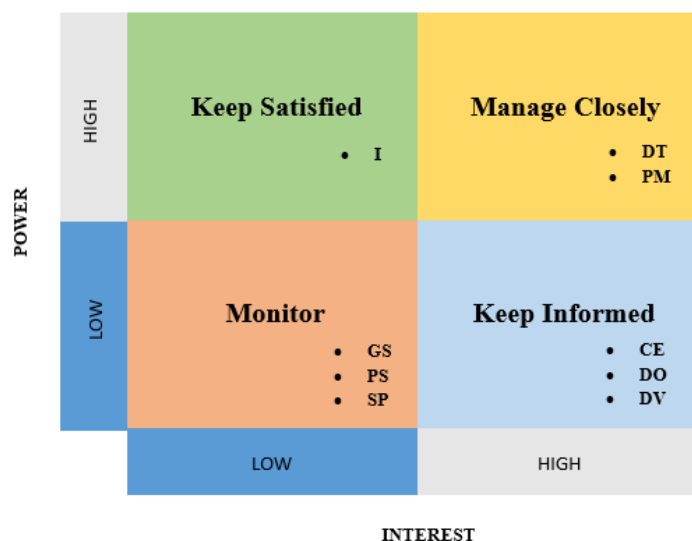


Figure 1: Stakeholder Influence Matrix

6 A Work Breakdown Structure

The Work Breakdown Structure can be found in Appendix A

6.1 WBS Dictionary

WBS code: identifier for each task to represent its hierarchical location.

Task description: description of the respective tasks. Description is given only to the vague tasks.

WBS code	Tasks	Task Description
1	Dog Care service	A web Portal
1.1	Project management activities	
1.1.1	Preparing project management plan	
1.1.1.1	Scope statement	
1.1.1.2	Scheduling	
1.1.1.3	Risk Plan	
1.1.1.4	Meetings	
1.1.1.5	Customer experimentation	Experiment Set-up where customers are invited to use our System.
1.2	Establishing design	Designing the whole system which includes system design, UI design, content elements and database.
1.2.1	Design user interface	Designing an attractive user interface.
1.2.1.1	Banner	
1.2.1.2	Logo	
1.2.1.3	Footer	
1.2.1.4	Font usage	
1.2.2	Content elements	Designing the main and interactive pages of the website.
1.2.2.1	About us page	
1.2.2.2	Contact us page	
1.2.2.3	Services page	
1.2.3	Database	Creating an ER model diagram of the database.
1.2.3.1	Database schema	
1.2.3.2	Database tables	
1.3	Implementation	
1.3.1	Backend	Implementing the functional activities of our project.
1.3.1.1	User registration	
1.3.1.2	User profile	
1.3.1.3	Choosing a service	Includes different services for different end-users (such as selecting weekly, daily or monthly service for Dog Volunteers and choosing daily, weekly or monthly subscriptions)
1.3.1.4	Displaying available volunteers	
1.3.1.5	Review and feedback	
1.3.1.6	Verification of volunteers	
1.3.1.7	Pick up facility	
1.3.1.8	Notifications	Notifications to users (such as alerts to dog-volunteers when they are been selected by a dog-owners)
1.3.1.9	Dog tracking	A feature which helps dog owners to track their dog when their dog is been volunteered for a dog walk
1.3.1.10	Tracking total distance	A feature for dog volunteers which helps them to track the total distance they have spent for dog walking
1.3.1.11	Payment gateway	A feature which helps the dog owners to connect to PayPal services for making payments.
1.3.2	Frontend	Implementation of overall layout, design and content.
1.3.2.1	Layout	
1.3.2.2	Design	
1.3.2.3	Content	

1.3.3	Database	Implementation of database based on the ER model.
1.4	System testing	Testing of the whole system feature by feature.
1.4.1	User services	
1.4.1.1	User registration	
1.4.1.2	User profile page	
1.4.1.3	Searching for volunteers	
1.4.1.4	Notifications	
1.4.2	Interactive elements	Testing the important interactive elements of the web site.
1.4.2.1	Google map	
1.4.2.2	Contact form	
1.4.2.3	Payment gateway	
1.4.3	Navigation	Testing the navigation i.e., determining the current location and directions to the required place.
1.4.3.1	Determining current location	
1.4.3.2	Directions	
1.5	Documentation	Includes important documentation for the project.
1.5.1	Guide for users	
1.5.2	Test report	Detailed report consisting of all the conducted tests and their reports.
1.6	Evaluation	
1.6.1	Reviewing requirements	Reviewing the requirements after the development of minimum viable product using the feedback gained from customer experimentation.
1.6.2	Redesign	Redesigning the product based on the new requirements.
1.7	Deployment	
1.7.1	Setting up website in live environment	
1.8	Review & Release	
1.8.1	Review	
1.8.2	Release	

Table 11: WBS Dictionary

7 Gantt chart

While scheduling the plan in Gantt chart we have only excluded weekends i.e. Saturdays and Sundays. The Gantt chart can be seen in Appendix B.

8 Resource Allocation

ID	Resources
RE1	Gopi Krishna Devulapally
RE2	Krishna Chaitanya Konduru
RE3	Sai Sandeep Chikkala
RE4	Ruthwik Chinta

Table 12: Resources

Task	Sub Task	Sub-Sub Task	Resource ID
Project management activities	Preparing Project Management Plan	Nil	RE1, RE2
	Scope Statement		RE3, RE4
	Scheduling		RE1, RE2, RE3, RE4
	Risk Plan		RE1, RE2
	Meetings		RE1, RE2, RE3, RE4

	Customer Experimentation		RE1, RE2, RE3, RE4
Establishing design	Design user interface	Banner	RE3, RE4
		Logo	RE1, RE2
		Footer	RE3, RE4
		Font usage	RE1, RE2
	Content elements	About us page	RE3, RE4
		Contact us page	RE1, RE2
		Services page	RE3, RE4
	Database	Database schema	RE1, RE2
		Database tables	RE3, RE4
		User Registration	RE1, RE2
Implementation	Backend	User Profile	RE3, RE4
		Choosing a Service	RE1, RE2
		Displaying Available Volunteers	RE3, RE4
		Review & Feedback	RE1, RE2
		Verification Of Volunteers	RE3, RE4
		Pick up Facility	RE1, RE2
		Notifications	RE3, RE4
		Dog Tracking	RE1, RE2
		Tracking Total	RE3, RE4
		Distance	RE1, RE2
		Payment Gateway	RE3, RE4
	Frontend	Layout	RE1, RE2
		Design	RE3, RE4
		Content	RE1, RE2
	Database	Nil	RE3, RE4
System testing	User Services	User Registration	RE1, RE2
		User Profile Page	RE3, RE4
		Searching for Volunteers	RE1, RE2
		Notifications	RE3, RE4
	Interactive Elements	Google Map	RE1, RE2
		Contact Form	RE3, RE4
		Payment Gateway	RE1, RE2
	Navigation	Current Location	RE3, RE4
		Directions	RE1, RE2
Documentation	Guide for users	Nil	RE3, RE4
	Test report		RE1, RE2
Evaluation	Reviewing requirements	Nil	RE3, RE4
	Redesign		RE1, RE2
Deployment	Setting up website in live environment	Nil	RE3, RE4
Review & Release	Review	Nil	RE1, RE2
	Release		RE3, RE4

Table 13: Resource Allocation Table

9 Quality Criteria

According to ISO 9126 [1] there are six major external software quality characteristics and each characteristics has again different sub-characteristics. We have used this standard to define both external and internal quality characteristics for this project. ISO 14598 [2] helped us to evaluate or assess the degree to which our product conforms to the selected ISO 9126 quality characteristics. Again for the selection of metric for each sub-characteristic, we have used same standard i.e. ISO 9126 PART 3 which had the details of metric for each sub-characteristics.

Characteristics	Sub-characteristics	Metric	Metric Description	Priority
Functionality	Suitability	Functional implementation completeness	To check whether every requirement is completely implemented as a function.	HIGH
	Accurateness	Computational Accuracy	Measures how often the end user ends up with inaccurate results.	
	Interoperability	Data Exchangeability	Measures the rate of successful data transfers between targeted software(in our case its PayPal) and other software when transaction is performed by end user	
Reliability	Maturity	Failure frequency	Measures number of failures in a specified time interval.	HIGH
	Fault tolerance	Breakdown avoidance	Measures the rate of breakdowns with respect to total number of failures.	
	Recoverability	Mean Recovery time	Measures the mean time for full recovery of the system when a breakdown occurs.	
Usability	Understandability	Function Understandability	Counts the number of functions whose purpose is understood by end users to the total number of functions.	MEDIUM
	Learnability	Ease of Learning to perform a task.	Counts time taken by end user to learn and perform a task efficiently.	
	Operability	Error correction	Measures the time taken by end user to correct his/her errors.	
	Attractiveness	Attractive interface	Measures the user satisfaction about attractiveness of interface	
Efficiency	Time behaviour	Mean Response time	Mean time taken to obtain result from entering the command.	MEDIUM
	Resource behaviour	I/O device Utilization	Calculates if rate of I/O device utilization could cause inefficiencies.	
Maintainability	Analysability	Failure analysis capability	Measures the effort of user or maintainer to find the reasons for failure.	MEDIUM
	Changeability	Change Implementation elapse time	Calculates the time taken to implement the changes in order to fix errors.	
	Stability	Change Success Ratio	Measures the rate of failures after maintenance is done.	

Table 14: Quality Characteristics for the Project

10 Risk Plan

Considering the major or top ten lists of software risks as proposed by Boehm in [3], we have identified different risks to our project and these are listed in the table below. For each identified risk team has rated its probability and impact on the scale of 1-10, after which we have evaluated Risk Exposure by multiplying probability and Impact. Risk Exposure will showcase the Risk severity.

ID	Risks	Probability	Impact	Risk Exposure	Materialized Assumption ID	Mitigation/Reduction Strategy
R1	Completed Software doesn't prove to be effective to target Users	8	9	72	M1	Set up customer experiments to validate assumptions about the software.
R2	New technology can give competitive edge but these new technologies can be unstable.	4	3	12	T1, T2	Before adopting a technology a SWOT analysis is done to gain insights about the technology. (Among team members).
R3	As a start-up we lack organizational maturity	6	5	30	Nil	Establish certain quality gates for each process which delivers artefacts.
R4	Unclear Roles and Responsibility	7	5	35	Nil	SWOT analysis and Brainstorming sessions among team members would help in defining the role and responsibilities.
R5	As a small development team, conflicts between team members can hinder project progress	6	8	48	Nil	Assign a leadership role to a person in the team by invisible voting, who helps in resolving the conflicts between team members.
R6	Inefficient Team capability. Risk arises when there is no balance in the team.	2	8	16	Nil	Same mitigation strategy as above can be used.
R7	Lack of Skills. Team members lack skills for developing the website	8	9	72	Nil	Training should be given to the team in Website Development or Outsource development of Website to a supplier
R8	Unrealistic effort, time and cost estimates	9	9	81	E1,E2,E3,S1,S2,B1	Proper training should be given to each member in different Project

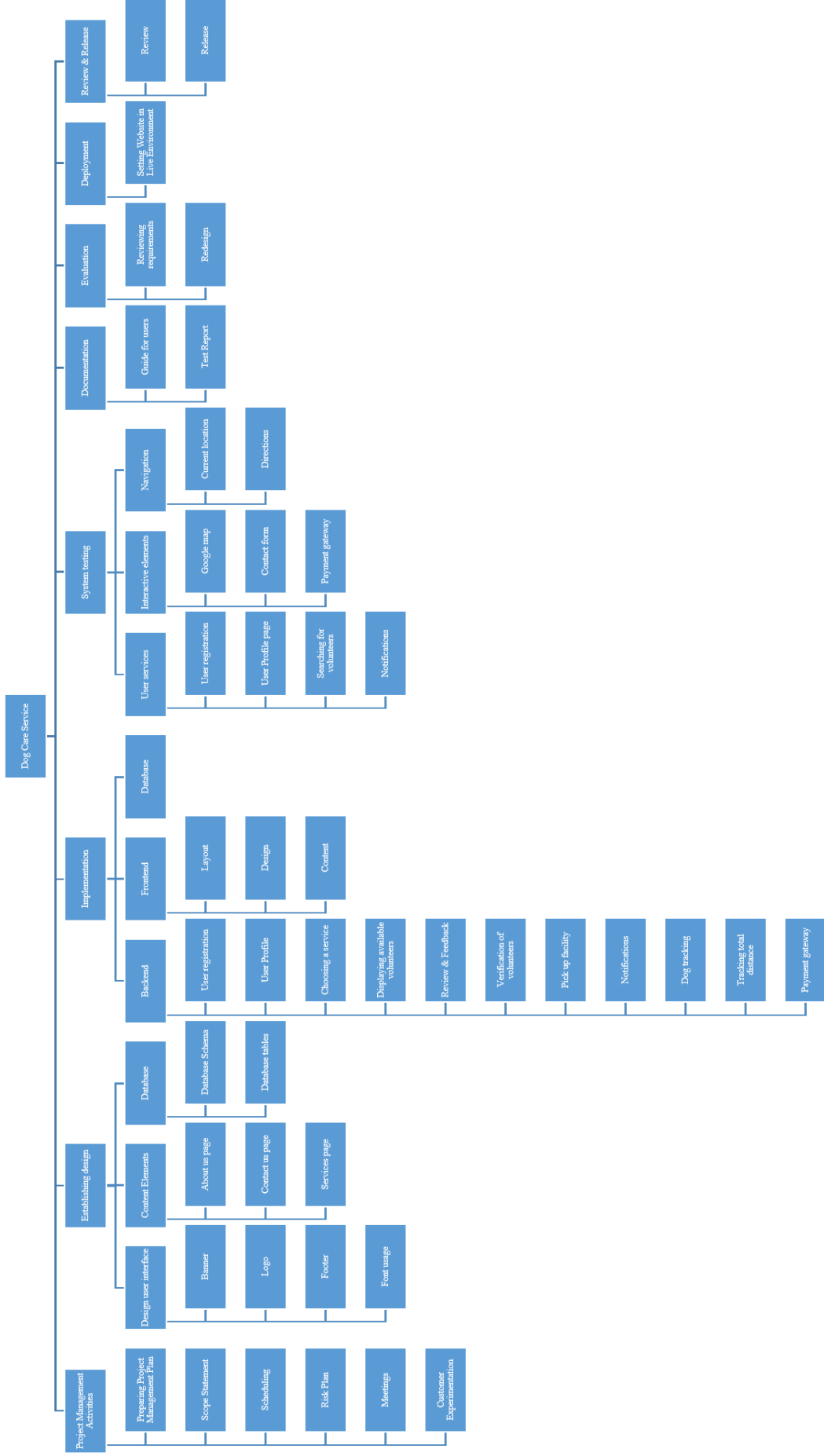
ID	Risks	Probability	Impact	Risk Exposure	Materialized Assumption ID	Mitigation/Reduction Strategy
						Management Activities
R9	Developing wrong user interface	3	8	24	Nil	Regular Customer Experiments with different prototypes can help in reducing this risk.
R10	No platform or Log Book for maintaining versions of different artefacts produced during the project	5	5	25	Nil	Maintain a Version Control system such as GitHub which helps in maintaining different versions of artefacts
R11	Outsourcing payment services to third party may prove to be ineffective. There might be a situation where they are failures in Payment Services.	9	9	81	O1, O2	Set-up Strong Service Level Agreements which deal different issues with payment service.

Table 15: Risk Table

11 References

- [1] "ISO9126 - Software Quality Characteristics." [Online]. Available: <http://www.sqa.net/iso9126.html>. [Accessed: 10-Nov-2014].
- [2] "untitled - metricasiso.pdf." .
- [3] B. W. Boehm, *Software risk management*. IEEE Computer Society Press, 1989.

Appendix A



Appendix B

Gantt Chart

