IS480 Project Proposal

Integrated Supply Chain and Carbon Modelling

OneRevolution

Version 1.2

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Team Members:

- Ang Qiao Ni, Shemin (shemin.ang.2011@sis.smu.edu.sg) - Lead Developer
- Chua Pei Shan (pschua.2011@sis.smu.edu.sg) - Project Manager
- Gwendolin Tan Tiong Hui (th.tan.2011@sis.smu.edu.sg) - Developer, UI
- Lim Xin Yi (xinyi.lim.2011@sis.smu.edu.sg) - Quality Assurance Manager
- Ng ZhenYuan (zhenyuan.ng.2011@sis.smu.edu.sg) - Developer, Analytics

Faculty Supervisor:

- Alan MEGARGEL

Sponsor and Clients:

- Client: Green Transformation Lab-DHL
  Client Contact:

  Mr. Stephan Schablinski (Stephan.Schablinski@dhl.com), Director of Sustainable Supply Chain Solutions at DHL, Director of Green Transformation Lab

  Mr. Tan Pang Jin (PangJin.Tan@dhl.com), Program Manager of Sustainable Supply Chain Solutions at DHL

1. PROJECT DESCRIPTION

Our project aims to create a web-based supply chain planning tool, ecoPlanning, for our client, DHL. The main focus of this planning tool is the ability to plan a scenario which consists of the four key players (Suppliers, Manufacturing Plants, Distribution Centres and Customers) virtually and be able to display the results of the calculation on the three key metrics (Costs, Carbon Emission and the Service level-Time) of a scenario. Our planning tool will be deployed onto Heroku for DHL.

The X factor of our project is the ability to manage a single scenario and analytical report of multiple scenarios for the management in the industry. We will be using D3 for the analytical report. The graphs that are visualised will be interactive and there are three types of graphs (Single Factors, Multiple Factors, and Normalising for one factor) that are displayed. For these three types of graphs, user is allowed to choose the different types of factors for X axis and Y axis. This will assist them to decide the most optimal scenario within a few split seconds. We will document our experience on wiki and bring value to the IS480 community.

2. MOTIVATION

In this highly technological world today, companies are emitting more carbon on each passing day. Therefore, it is crucial for companies to know how they can reduce their carbon footprint to not only save cost but also to save the environment. Hence the main motivation of doing this project is to provide a user-friendly interface which would attract companies to use it. By allowing managers to plan ahead and analyse statistical report generated by our ecoPlanning tool, managers can make a better and more inform decision on which is the most optimal scenario they should take to reduce their carbon footprint.

Moreover, this application helps managers to save their time as it enables managers to have a bird eye view of their supply chain process as well as assess the impacts of various scenarios on the key metrics. Thus, allowing the company to save potential cost as they would come out with the optimal strategy to locate their key players and decide the mode of transport of the product before they execute it.
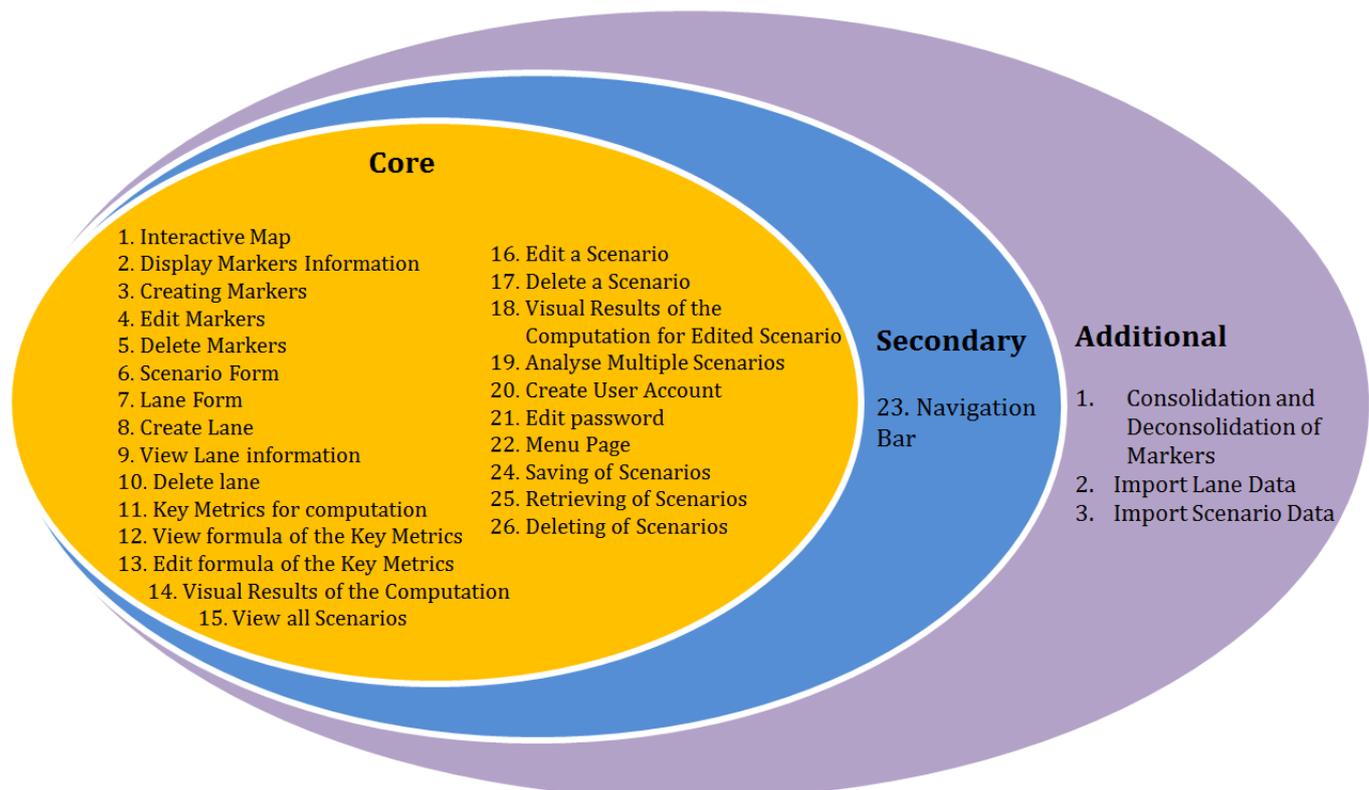
3. STAKEHOLDERS

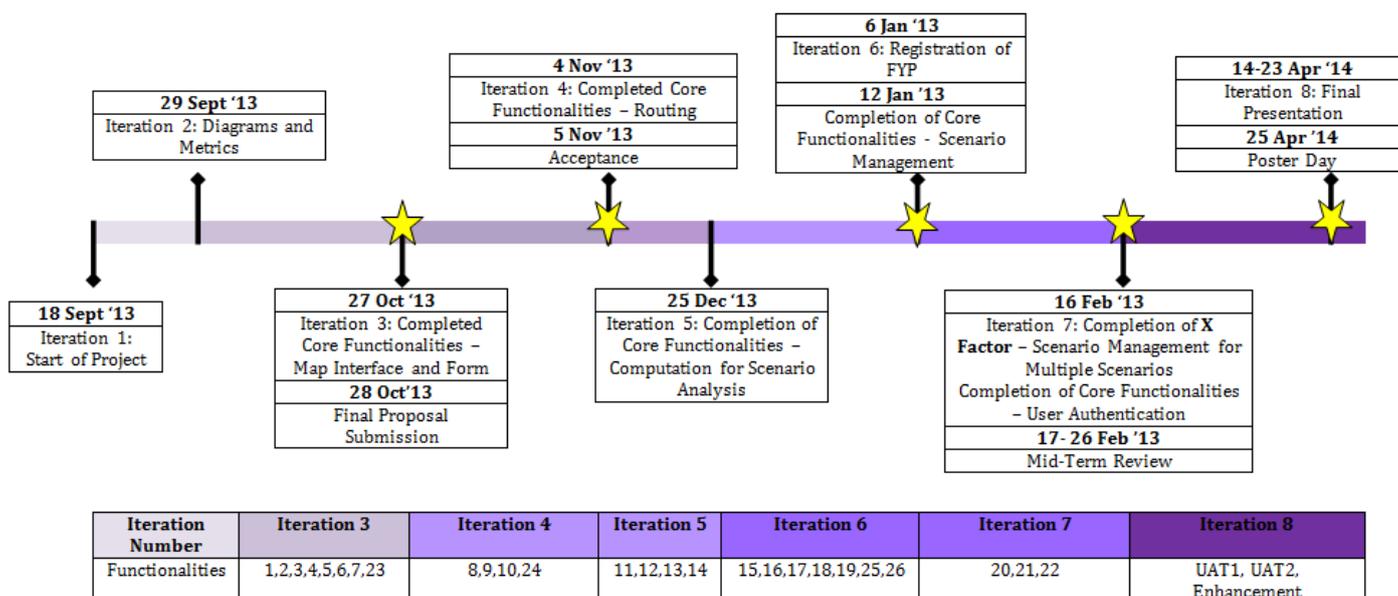|	
Client	Green Transformation Lab-DHL - Mr Stephan Schablinski and Mr Tan Jin Pang. Mr Stephan is the director of Sustainable Supply Chain Solutions (SSCS) at DHL and Director of Green Transformation Lab while Mr Tan is the program manager of SSCS at DHL. DHL will like to use this web-based planning tool to plan their supply chain processes. In future, if possible, they would like to promote this tool to other companies in the manufacturing industry.

4. SCOPE

*Scenario is the end-to-end supply chain which refers to all of the lanes ** Lane refers to the point from one marker to another marker).*
For more information about the functionalities, do take a look at our wiki page.

Core

1. Interactive Map
2. Display Markers Information
3. Creating Markers
4. Edit Markers
5. Delete Markers
6. Scenario Form
7. Lane Form
8. Create Lane
9. View Lane information
10. Delete lane
11. Key Metrics for computation
12. View formula of the Key Metrics
13. Edit formula of the Key Metrics
14. Visual Results of the Computation
15. View all Scenarios
16. Edit a Scenario
17. Delete a Scenario
18. Visual Results of the Computation for Edited Scenario
19. Analyse Multiple Scenarios
20. Create User Account
21. Edit password
22. Menu Page
24. Saving of Scenarios
25. Retrieving of Scenarios
26. Deleting of Scenarios

Secondary

23. Navigation Bar

Additional

1. Consolidation and Deconsolidation of Markers
2. Import Lane Data
3. Import Scenario Data

5. PROJECT MILESTONE

Milestones for the whole project

Iteration Number	Iteration 3	Iteration 4	Iteration 5	Iteration 6	Iteration 7	Iteration 8
Functionalities	1,2,3,4,5,6,7,23	8,9,10,24	11,12,13,14	15,16,17,18,19,25,26	20,21,22	UAT1, UAT2, Enhancement

6. RISK AND CONTINGENCY PLANS

Type of Risks	Description of Risk	Mitigation Plan
Technical Risk	The team may not be able to meet the deadline for constructing a function due to the lack of competence in technical aspect.	Peer learning is important and with the use of Google to research on the technical aspect before we start to code.
Resources Risk	Team member's laptop crashes during fyp period	Backup copies are stored in cloud-based application, e.g. Git
Project Management Risk	Team member might be unaware of the latest update hence he or she might document or code the wrong stuffs.	Weekly meetings to do a progress review of what has been done and ensure that everyone is on track.

7. RESOURCES AND REFERENCES

Description of Technology	Our Team will be developing this web application mostly on JavaScript and JQuery while using Java to provide a bit of our backend support. The basic map interface will be implemented with the help of Google APIs but the functionalities will be provided by our own JavaScript codes. As for the analytics portion of ecoPlanning, we are looking at using D3 to provide an interactive chart to display to the users. The database we will be using is mySQL. Currently, our team is using the IS480 VMware to host our web application. Lastly, our framework is MVC.
References	D3, http://d3js.org/, http://www.codecademy.com/courses/web-beginner-en-kcP9b/0/1 Google Maps Api, https://developers.google.com/maps/documentation/javascript/ MySQL, http://www.w3schools.com/php/php_mysql_intro.asp Twitter Bootstrap: http://tutorialzine.com/2013/07/50-must-have-plugins-for-extending-twitter-bootstrap/, http://www.w3resource.com/twitter-bootstrap/tutorial.php Angula.js http://angularjs.org/, http://www.thinkster.io/pick/GtaQ0oMGIl/
Hardware needed	Windows Laptop, Web Server
Software needed	Windows OS, Eclipse juno, MySQL workbench, Wamp server, JDK, apache tomcat
Supervisor Meeting	Wednesday, Fortnightly for updates, testing and feedbacks on application
Client Meeting	Monday, Fortnightly for updates of metrics and application development
Internal Meeting	Weekly for progress review