# Post-Mortem Report

This document presents a detailed analysis of software requirement analysis activities conducted by Team 26. The first artifact we created during the analysis is a vision document. Following is the discussion in details:

1. Regarding tasks 3, 4 and task 5 (a, c), answer the following questions:
    1. What was the advantage of this technique based on your experience in this assignment?

    **Conflict Resolution: Generating Conflict resolution with tactics like – Avoiding boundary conditions, Adding new requirements to avoid or weaken one of the conflicting statements and Restoring Conflicting statements.**

    - Efficient and systematic approach to resolve conflicts as there are some well-defined tactics that can be applied in general to a variety of domains.
    - Also acts as an extension to requirement elicitation since resolving conflicts helped us uncover some new requirements which were not discussed in the initial draft of our vision document.
    - Once the source, target and boundary conditions are evaluated it is easier to apply the various tactics and come up with the best one.

    **Conflict Evaluation: Weighted Matrices**

    - Provides an efficient way to choose the best option from a list of alternatives keeping the non-functional requirements as criteria.
    - Easy to understand and more intuitive approach as we can actually quantify and support our rational behind choosing a particular resolution option.
    - Provides flexibility to give more weightage to aspects that matter more.
    - Provides a quick summary of impacted Non Functional Requirements (NFR).

    **Risk Identification: Risk Checklist**

    - Non Functional Requirements (NFR) taxonomy helped in narrowing down the risk areas.
    - NFR taxonomy's generic nature makes is easy to map them with a variety of domains.
    - Complete Non Functional Requirements taxonomy offers an opportunity to explore loopholes linked to some others aspects may have been missed in the initial drafts.

    **Risk Assessment: Qualitative Assessment – Likelihood of Occurrence Table**

    - Simple easy and low-cost way to measure the various consequences associated to a risk
    - Comprehensive in nature as it measures the severity based on various likelihood levels for each consequence.
    - Allows us to prioritize and work on risks based on their severity.

**Risk Control: Risk Reduction with tactics – Like Reducing risk likelihood or avoiding the risk altogether.**

- Easy to elicit the counter measure using the mentioned tactics.
- Counter Measure evaluation relies on making use of Non Functional Requirements as the evaluation criteria so can be applied to a variety of risks in general.
- Offers a more accurate and quantified way to justify our rational behind **choosing** a counter measure as the most **Cost-effective alternative**.

2. What was the disadvantage of this technique based on your experience in this assignment?

**Conflict Resolution: Generating Conflict resolution with tactics**

- Some cases may not have the clear distinction of source, target, and boundary conditions and so applying the operators may not provide the best resolution.
- Sometimes adding new requirements to resolve the conflict might increase the scope of development and would thus result in increased development costs and delay in product delivery.

**Conflict Evaluation: Weighted Matrices**

- Difficult to come up with the best weight for the counter measures as it requires domain expertise.
- Need sufficient data and use cases to substantiate our rational behind assigning higher or lower weights to any Non Functional Requirement (NFR)
- False or incorrect data can severely affect the output.

**Risk Identification: Risk Checklist**

- Risk of wasting time in analysing a Non Functional Requirement which is not that relevant to our domain or which does not impose any risk in our problem world.
- Sufficient knowledge of the domain is required.

**Risk Assessment: Qualitative Assessment – Likelihood of Occurrence Table**

- Requires justification for assigning severity at each likelihood level for every consequence. This might become a time consuming activity with large number of consequences.
- Risk and consequence likelihood can differ based on various external factors like market segment, geographical location etc.

**Risk Control: Risk Reduction with tactics**

- As it involves metric based quantified comparisons we need to come up with such Non Functional Requirement (NFRs) as evaluation criteria which apply well to every alternative being compared. It sometimes becomes hard to come with such NFRs.
- Sometimes multiple alternatives might end up having the same score for their effectiveness so it becomes hard to choose one out of the multiple.

3. How efficient was the technique, i.e. how good results produced given the time it took to use?

**Conflict Resolution: Generating Conflict resolution with tactics**

- If the source, target and boundary conditions are identified, this technique can be saves a lot of time in coming up with a good resolution.

**Conflict Evaluation: Weighted Matrices**

- As it is a quantitative assessment, provided a quick and efficient way to choose the best option provided the weight data is valid and has a solid rational behind it.

**Risk Identification: Risk Checklist**

- Very efficient in narrowing down the search area.
- Easier to spot the risk when searched on the lines of a specific NFR.

**Risk Assessment: Qualitative Assessment**

- Easier to determine the consequence likelihood.
- Captures various levels of likelihoods to cater to varying nature of end users and the diversity surrounding environment for the finally deployed working solution.

**Risk Control: Risk Reduction with tactics**

- Simple and easier technique to come with the counter measures in a short amount of time.
- Ensures that the solution developing organization always strive to provide the most Cost-Effective solution without compromising on the quality of the product.

4. In which situations would you use this technique in a future project? In which situations would you not use this technique in a future project?

**Conflict Resolution: Generating Conflict resolution with tactics**

- This technique can be used for small projects where the feature set is less and the features are well defined.
- This technique may not be suitable when there is large number of components and they all interact in different ways.

**Conflict Evaluation: Weighted Matrices**

- This technique works very well when there are accurate data available or all the stakeholders have sufficient domain knowledge to assign accurate weights.
- It is also good when a similar solution exists, and the knowledge can be reused.
- This technique can provide misleading results when the data is incorrect. Sufficient data may not be available for brand new projects, where the features are vague and most stakeholders don’t have sufficient domain knowledge.

**Risk Identification: Risk Checklist**

- Good point to start the search of a variety of risks. If the feature set is huge using this technique can provide a good starting point.
- If there are more well-defined components in the project, component inspection would be a better choice than this technique

**Risk Assessment: Qualitative Assessment**

- Only works well when there is sufficient data or some previous knowledge is available to perform the assessment.
- May not suitable for scenarios the list of possible consequences is too large as the number of combinations would be too high to provide a rational for.

**Risk Control: Risk Reduction with tactics**

- Works well with most of the projects given the risks are concrete and well defined.
- May not work well for complex projects with lots of interconnected components. This technique may not sufficiently cover all the components in the system.

2. Summarize how much time was spent (in total and by each group member) on the steps/activities involved as well as for the delivery as a whole. Be honest with the time spent, as this information will in no way be used for any grading. For more details related to commit history and logging of this delivery-2, ***please see Appendix A to Appendix C at last page of this report***.

**Note: All time mentioned in the table is in minutes**

| Task | Apoorv | Divya | Manik | Nikhil | Sakib |
|---|---|---|---|---|---|
| **Identifying Defects and conflicts** | 70 | 80 | 80 | 60 | 100 |
| **Interaction Matrix** | 50 | 60 | 40 | 60 | 30 |
| **Conflict Resolution** | 70 | 60 | 40 | 45 | 45 |
| **Conflict Evaluation** | 70 | 60 | 50 | 30 | 30 |
| **Documenting Conflicts** | 30 | 30 | 30 | 60 | 60 |
| **Risk Identification** | 30 | 30 | 80 | 80 | 50 |
| **Risk Assessment and Control** | 90 | 90 | 80 | 60 | 40 |
| **Post Mortem report preparation** | 40 | 60 | 80 | 30 | 30 |
| **Requirement** | 180 | 180 | 150 | 45 | 60 |

| | | | | | |
|---|---|---|---|---|---|
| **report preparation** | | | | | |
| **Communication** | 350 | 300 | 350 | 300 | 350 |
| **Review** | 150 | 100 | 120 | 80 | 100 |

**3. In addition to the material seen in class, what other techniques did you apply for completing this delivery?**

**a. Which techniques worked well**

- Fair and smart distribution of tasks based on each member's availability allowed us to complete the task on time.
- Brainstorming among the team members.
- Splitting more coarse-grained tasks to smaller manageable tasks.
- Peer review

**b. Which techniques did not work?**

- As all of us were working in parallel for most of the tasks in this delivery (they required inputs from every member of the team), it led to generation of some duplicate items which added an extra effort of identifying such items and then eventually removing them.

**4. How did you work together as a group in the project? What worked well, and what did not work during your interaction(s)? What would you do differently in the future?**

- **Collaboration**: Used GitHub and Google Docs together to collaborate and maintain versions. For drafting report and brainstorming we mainly used Google docs. For writing final report we used GitHub as it can be used to better track and log changes.
- **Communication**: Almost everyday Zoom meetings around 1-2 hours and WhatsApp group for offline group chat to know the working status of each other and avoiding the merge conflict on GitHub. We planned to move our meeting on Microsoft teams in future as free Zoom account has 40mins meeting constraints for each call, but we could not move because of technical problem (i.e., microphone) in Team Microsoft.
- **Reviews**: Reviews happened online during meeting with all the members. We also offline/individual reviews and discussed only the outcome/comments during the meetings.
- **Management**: Peer monitoring and contributing in pair helped to manage the tasks effectively as well as efficiently. Again, a time tracking tool named "Toggl" like delivery-1 is used to track time for zoom meetings and tasks. By using Google doc for drafting report and brainstorming each task and then writing final copy of this report help us efficiently to manage each task (i.e., task-1 to task-5) properly. We planned to use Kanban/SCRUM style agile management process for this delivery-2 but could not afford to manage everything due to time constraints.

# Appendix

**Appendix A**
Delivery-2 draft report for brainstorming, discussion, peer review on Google drive:
https://docs.google.com/document/d/1G8VWDxqtq3j4BFMEu1XXoHW_oYdRIbL9/edit

**Appendix B**
Final report for delivery-2 commit history on GitHub:
https://github.com/sakibshuvo/SOEN-6481-SRS

**Appendix C**
Time tracking report for delivery-2 generated by Toggl time tracker:

## Detailed report

toggl

2020-07-12 - 2020-07-18

Total 11 h 29 min

| Date | Description | Duration | User |
|---|---|---|---|
| 07-12 | **Planning for delivery 2** | **2:00:00** | Sakib Shuvo13 |
| | SOEN 6481 | 21:00-23:00 | |
| 07-13 | **Defects and risk reviews** | **2:00:00** | Sakib Shuvo13 |
| | SOEN 6481 | 23:00-01:00 | |
| 07-15 | **discussion on conflcit and resolution** | **2:14:00** | Sakib Shuvo13 |
| | SOEN 6481 | 01:00-03:14 | |
| 07-15 | **defect resolution** | **2:15:00** | Sakib Shuvo13 |
| | SOEN 6481 | 23:00-01:15 | |
| 07-16 | **Final rivew** | **3:00:00** | Sakib Shuvo13 |
| | SOEN 6481 | 18:03-21:03 | |

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**Appendix D**

Git-Hub Contribution: