

A METHODOLOGY TO FINALIZE THE REQUIREMENTS FOR A PROJECT WITH MULTIPLE STAKE- HOLDERS

Presenting Software Engineering Workshop as a Solution

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Abstract: Implementing software projects for large corporations, more often than not, involves large number of stakeholders, each with their own set of requirements, which makes requirements finalization very difficult. The authors propose Solution Envisioning Workshop (SEW) as a solution and present the practice from the context of a large project executed for a European banking giant. The project had a very large and diverse set of stake-holders- around 300 member banks as the client organizations, interfacing requirements with around ten separate systems/ projects, active involvement of central departments of the organization as active stakeholders. The paper elaborates on the approach taken towards implementing the SEW, the preparatory & follow-up activities, the benefits, limitations and the lessons learnt. They conclude that the SEW approach results in creating better understanding, much faster requirement finalization. Quantitative and qualitative inputs are provided to corroborate the findings.

1 THE PROBLEM CONTEXT

Scope management, requirements prioritization and ensuring user acceptance at the end of the project are constant concern from requirements perspective. This is more so in the case of large software project that affect one entire department or the complete enterprise, due to the simple fact that, each such software project implementation results in affecting large number of organizational resources, processes and practices. Each of these entities becomes a stakeholder in the project success and joins the project with their own specific agenda. As the **number of stake holders** increases, the complexity the requirement management process also increases. In some cases this is because the requirements from various stakeholders are contradictory but mostly it is because there is lack of agreement on the **priorities of the requirements**. Since for each of the stakeholder their own set of requirements are the most desirable ones and a project can satisfy only a limited set of requirements, the task of **scope definition and requirements finalization** becomes very difficult. And if the project fails to satisfy any of the requirements of any of the stakeholders, the **acceptance of the project** becomes uncertain,

resulting in continuous scope creep and time, effort overruns and even project scrapping/ failure.

2 INTRODUCING SOLUTION ENVISIONING WORKSHOP

Enter Solution Envisioning Workshop or SEW. SEW is a systematic approach to counter the problem of requirements finalization in the above context. It gathers all key stakeholders together for a short but intensely focused period (Leffingwell, Widrig 1999). This results in better understanding and faster decision on issues.

The SEW makes the process much more systematic and ensures that the maximum benefits of the exercise can be taken out with minimum effort and time. SEW is a rapid, high impact process designed to align the organizational stakeholders behind a business opportunity, the requirements that will enable that opportunity, and a credible delivery plan (Please refer to the figure 1). The SEW approach is ideal for certain software project scenarios as given in the figure 2.



Figure 1: SEW Triple convergence of the benefits.

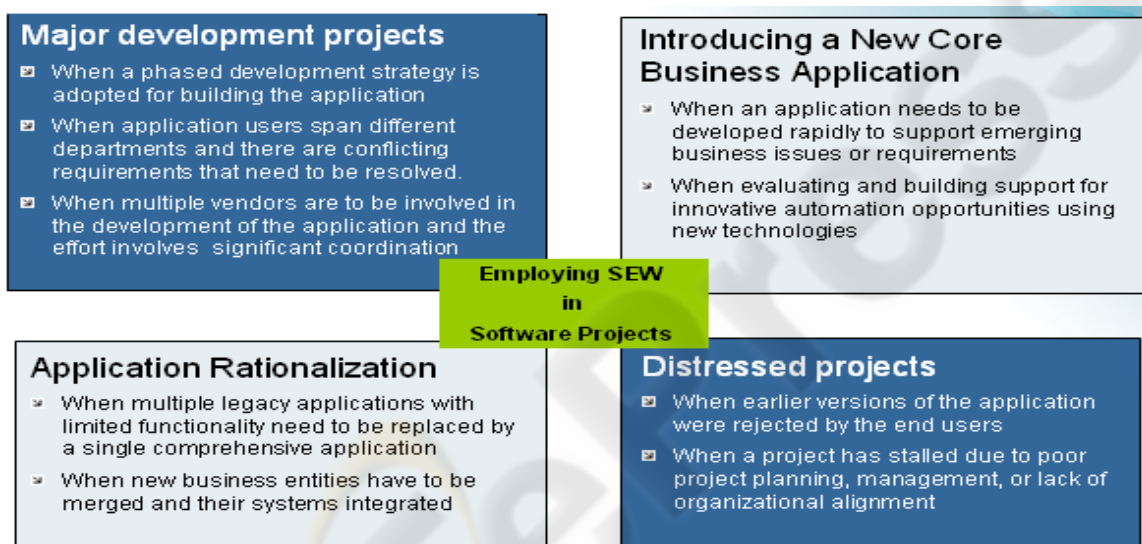


Figure 2: SEW usage scenarios.

3 INTRODUCING THE PROJECT AND COMPLEXITY

The SEW approach is discussed here from the perspective of a project implemented by authors' organization. This was large development project for a European bank. The proposed system was a centralized, loan processing system having automated interfaces with multiple systems.

From the perspective of the requirements management and other issues, the project complexity was so severe that the earlier attempts had failed two times. This complexity came mainly from large number of stakeholders and complex interfacing

requirements with the adjoining systems/ projects (need to finalize and constantly update the system-interface contracts).

An important factor that increased the number of stakeholders was the 'consortium structure' of the bank, which consists of a network of around 300 member banks, the Central Organization and several daughter organizations. In most cases the member banks work as independent organizations.

With regards to using and maintaining the legacy software system also these banks were working independently. Even though each member bank started with identical software, gradually difference of contexts necessitated diverse changes and finally

they had, more or less, a different system. From requirement management point, this meant bigger and very diverse set of requirements.

The project had involvement of a large number of stakeholders including departments for Central organization for IT strategy, and the departments for legal & compliance issues, Quality, Usability etc.

4 SEW IMPLEMENTATION IN THE PROJECT

The project profile fitted the ‘Major Development Project’ scenario for SEW implementation. (Please refer to Figure 2)

Under the SEW approach, the actual workshop to finalize the requirements takes place towards the end of the requirement gathering stage. The workshop requires the largest commitment of time and resources in the preparation and participation of key stakeholders whose time is at a premium (Polikoff, Coyne, Hodgson 2005). A part of the time and effort is spent on follow-up activities. The figure 3 would clarify it further.

The Initial Overview stage involved study of the legacy system, understanding its software context (relation with adjoining applications), and the business process behind the system. There were one-on-one/ group discussions; based on these initial Software Requirement Overview Document was

prepared. The final finding was presented to all stakeholders.

The requirements were divided into functional and non- functional (technical) tracks and there onwards were pursued separately. Wherever needed, the tracks were put in sync with each other.

During the requirement gathering, the documents for these requirements were perfected, by several rounds of review and rework, to the extent possible (provisional approved).

To complement the requirements specification, a prototype was also prepared and updated/ elaborated continuously. The decision on the scenario to be depicted in the prototype was made in the beginning itself.

During final Workshop the output of all this preparation is presented to all stakeholders. The discussion was facilitated by the prototype.

The new/ diverging points coming up during the workshop were handled in the following fashion

- Specific observation on part of the system: Logging the item as a specification defect.
- Generic observation on any part of whole of the system: Listing & prioritizing items.
 - High priority: Logged as specification defects.
 - Medium priority: Logged as Change requests.
 - Low priority: ‘Wish- list’ items. The priority for items was determined so that release plan for them can be made.

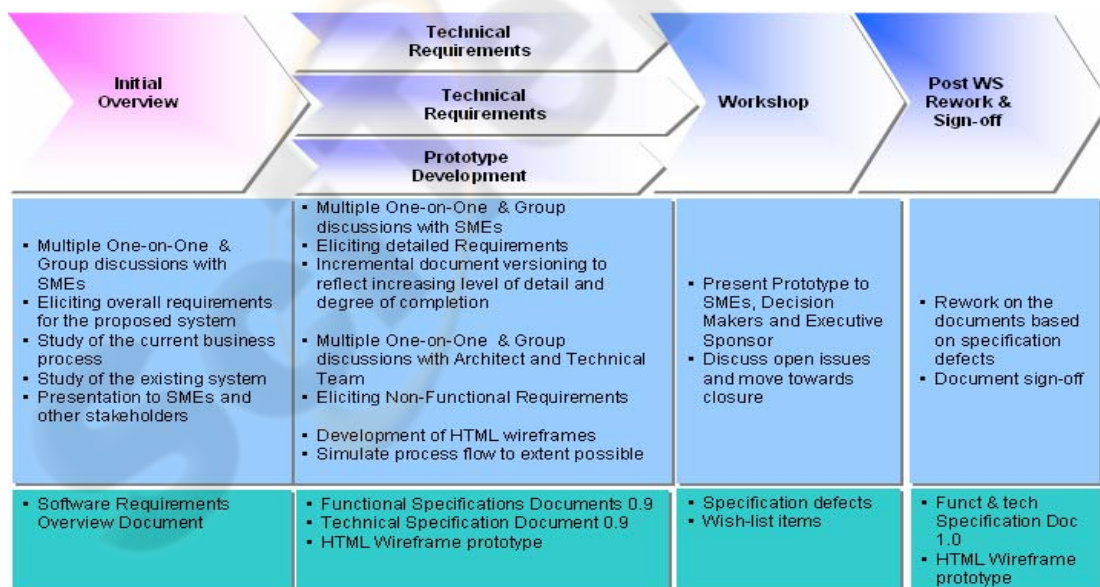


Figure 3: SEW Approach in the project’s requirements gathering phase.

5 BENEFITS FROM SEW

In general, the SEW provides the following benefits for the software projects:

- Requirements workshops provide business value by reducing the time it takes to gather requirements, by increasing team productivity, and by reducing risks associated with software projects (Gottesdiener, 2002).
- Build consensus on the problem scope
- Validating business goals
- Identifying the project objectives
- Core functional requirements

From the perspective of SEW implementation in the project under discussion the benefits are:

- On the spot discussion helped in preventing possibility of later disagreements.
- Consent from 'Senior User' (representative of member banks) ensured acceptance by the bank on the scope decision.
- Changing the document status from 'Provisionally approved' to 'Approved'.

The workshop came out with 133 items. Without SEW, such items would have surface very resulting in big rework.

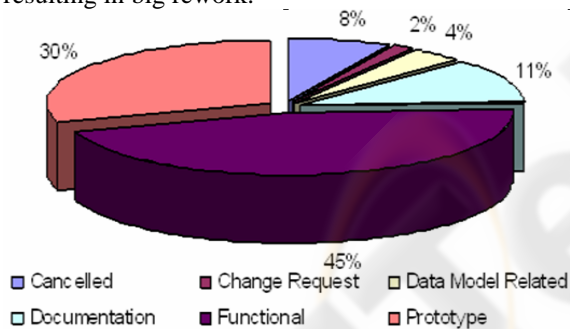


Figure 4: Workshop items- number breakup.

Please refer to Figure 5. Around two- third of the items are of medium/ high severity.

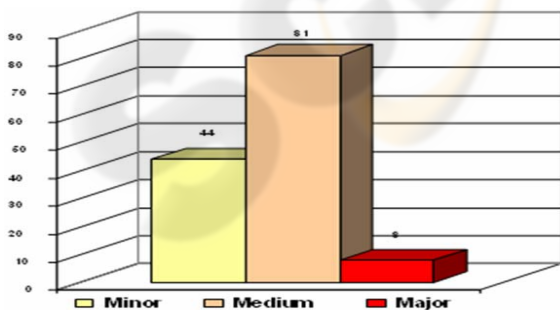


Figure 5: Workshop items- severity.

6 LIMITATIONS OF SEW

The SEW implementation in the project put forward the following disadvantages/ limitations of the approach:

- Time management: The ideal team for workshop consists of people having thorough understanding of processes and hence considerable experience within the organization/ industry. It's very difficult to get such people in one place at the same time.
- Coordination problem: SEW requires active participation of a project sponsor, who has authority to make decision in case of persistent disagreement among participants.
- The use of an outside facilitator experienced in requirements management can help ensure the success of the workshop. (Leffingwell, Widrig 1999). For large group of stakeholders such facilitator, with a convincing yet agreeable approach for persuading stake- holders and coordinating the proceedings, is rather a must.
- Time to ponder: Difficult to have continuous workshop sessions. Participants need to reflect over items and even need to discuss it with their other colleagues.
- The elaboration and documentation of the items discussed in workshop requires effort after workshop.

7 THE WAY FORWARD WITH SEW

The authors envision the following improvements:

- Staggered workshop: Dividing the workshop into multiple small workshops.
- The workshop approach should have been utilized for the beginning of the requirements as well.

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