

Can Developers Visualize Applications?

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Statistics presented by Assay, 2008 states that 62% of the IT projects fail before completion. Hence, one of the biggest challenges in IT development projects is to successfully deliver projects – on time, within budget and with expected functionalities.

According to study presented by Meta Group, 60-80% of project failures can be attributed to poor requirement gathering practices and analysis of the requirements. Small and medium enterprises often struggle with budget allocation for IT projects. This leads to a compromise where business analyst(s) are not included in the team. Developers are given the task to visualize applications and develop it accordingly. However, due to lack of proper training in business analysis, developers fail to ask the right questions to ascertain the complete scope of the project. Also, developers tend to start programming as soon as possible. This leads to a situation where developers are working on application without completely understanding the scope and vision of the project.

The objective of this article is to discuss the best practices for requirement gathering and analysis that increases probability of success of IT projects.

Requirement Gathering Techniques

There are a number of techniques that may be used to gather requirements. They are:

- (1) Brainstorming: it is used to get as many ideas as possible from a group of people to find solutions to problems. Information once gathered needs to be reshaped and combined. Also, prioritization of results is done.
- (2) Interviewing Users: Face to face interview can be conducted with customers, business users, domain experts and industry analysts to gather and validate requirements.
- (3) Sending Questionnaires: This technique is used where face to face interviews are not possible. The questionnaire should be

designed such that it is able to capture the complete scope of the project.

- (4) Studying similar system: Analogous systems in the form of competitor's product, product in market that does not completely fulfil client's need or an old system that needs to be modified based on current business needs may be available. In these cases, studying such system as a starting point help in envisioning the new application.
- (5) Talking to support team: Talking to the support team helps in capturing requirements desired by the real users of the product.
- (6) Looking for unintended use: At times, users use things for purposes that they are not designed for. This may lead to creating a new and innovative product.
- (7) Joint Application Development Sessions (Workshops): These sessions are conducted so that participants can collaborate to document requirements. Session ends only when session objectives are complete.
- (8) Observation: Observation can be passive or active. It helps in identifying implicit requirements. Analysts are also able to prepare a process flow and identify pain areas, awkward steps and opportunities for improvement.
- (9) Interface analysis: Application needs to be analysed with the interface of product with other external applications to capture requirements that are not immediately visible to users.

Non-functional requirements that include application performance, number of normal and concurrent users, page response time, hardware and software requirement of the application, also need to be properly captured and documented. It is essential to note that while documenting non-functional requirements, it is advisable to write specific requirements rather than wishful statements like 100% reliable, handle all unexpected failures. Instead, precise statements like website page should appear in 1s in broadband internet connection of speed 1 Mbps or website should support 1,000 concurrent users and a load of 2,000,000 users should be used.

Importance of Analysis

Once the requirements have been captured using one or more of the above mentioned techniques, they need to be organized in useful information. Functional requirements are then analysed and documented as use cases. Use cases describe different actors involved in the system and how the system works from these actors' perspective. In addition, prototypes for the system are created. Prototypes are used to illustrate design aspects and features of the product. Customers can view the prototype and give comments on it as well as can express missing requirements.

The prototypes developed can be used for

- (a) Getting customer and real user feedback
- (b) Doing feasibility study to identify its market
- (c) Giving demo to investors for funding
- (d) Communicating with vendor to get a more accurate cost and time-frame estimates for development and deployment of the project

Analyses of the functional requirements help in developing and refining of ideas and identifying any key flaw in design or flow. This helps in saving time, effort and money by finding loopholes, eliminating misunderstandings and hence rework. Also, it helps in keeping errors, gaps and omissions under control which are significantly more expensive to fix at the later stages of development. Analysis of non-functional requirements enables the architect to design the application to meet the NFRs from the start of the project itself as they are more expensive to incorporate at the later stages.

Role of Business Analyst in team

Effective business analysis is essential for the success of the project. In order to ensure that IT is able to deliver business value, IT needs to structure itself so that solution meets business requirements.

Business analysts are individuals who understand the business perspective as well

the technology side that can add value to the business. The roles of business analyst in the team are:

- (1) Define and scope business areas
- (2) Analyse and document requirements
- (3) Create prototypes
- (4) Communicate requirements
- (5) Identify solutions and verify that solutions meet the requirements

With a formal training in business analysis, business analysts are able to visualize the "big picture" for the product.

Conclusion

Requirement Gathering and Analysis phase are an integral part of the product development life cycle. Poor requirement capturing and analysis is one of the key reasons for failure of the project. For the success of the project, it is essential to include business analysts in the team. With their formal training in requirement gathering and analysis, they are able to capture the business requirements as well as suggest solutions that meet the business requirements. Also, requirement gathering and analysis is a time taking process. Hence, it is necessary to be patient with this phase. After all, well executed business analysis lead to successful projects.

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In his current role, Rahul Srivastava is instrumental in requirement gathering and analysis of requirements of several projects.

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