

Software Development Methodology

E-Square Business Solutions (further referred to as E-Square in this document) software development methodology refers to the framework that is used to structure, plan, and control the process of developing an information system. E-Square proposes a solution where the integrated software solution shall be installed. Functions and Modules of proposed software solution shall be developed in a phase wise manner. The overall framework shall, however be thought of at the initial phase itself so that modules that are developed later on can fit in the overall framework. The systems therefore remain scalable. The system is to be kept as generic as possible to encompass future needs.

One of the highlights of our development methodology is the Collaborative model of project execution. A high degree of collaboration between the E-Square and client team is suggested for faster and effective resolution of requirement and design related issues.

The framework of a software development methodology consists of:

- A software development philosophy, with the approach of the software development process
- Multiple tools, models and methods, to assist in the software development process.

Phases

- **Client specific Requirements gathering & System analysis** - The representatives of E-Square visits the customer to discuss & understand client specific requirement in detail and to demonstrate our generalize software. The requirement gathering process is intensified and focused specially on software, to understand the nature of the program(s) to be built, the system engineer or "Analyst" must understand the information domain for the software, as well as required function, behavior, performance and interfacing.
- **System Analysis, Design & Requirement specification report submission** - By the end of the 1st phase, the team furnishes a document that holds the different specific requirement, modules, and utilities for the candidate system. It also includes the costs, project schedule, target dates etc.... This step involves breaking down the system in different pieces and drawing diagrams to analyze the situation. Analyses project goals, breaking down functions that need to be created, and attempts to engage users so that definite requirements can be defined.

Detailed project proposal consists;

- a) *Functional Specification*
- b) *Technology identification and suggestion*
- c) *Project approach for development work*
- d) *Study of the reference work or similar application*
- e) *Define scope of the work*
- f) *Ballpark time estimation*
- g) *Resource allocation*
- h) *Project estimation*

- **Acceptance of contract** – On receiving of the proposal client makes detail study. Client shall forward their change request, if any. Then proposal acceptance and contract sign off on final requirements document.
- **Resource Allocation** – on the confirmation of contract, E-Square assigns Project manager (PM) and technical team for project development / customization. PM raises Software requirement specification document (SRS), Project plan and System architecture design document (SAD). PM will act as bridge between client & development team.
- **Software development, customization & System Testing** - In case of generalize software this phase doesn't require but in case of customize software, Modular and subsystem programming code will be accomplished during this stage for the alpha delivery. The code is tested at various levels. Unit, system, module and user acceptance testing are often performed.
- **User Testing** – After completion of system testing, software shall be installed on test environment at client premise. Database migration if current system available at client side. Design & content integration to the program code. User group does the functionality testing by matching software functionalities mentioned in requirement specification report.
- **Installation, Implementation & User Training** - The final stage of a project, where the software is put into production and is used by the actual business. User training will be provided by E-Square representatives for the efficient use of software. Delivery of technical write up, help guide or technical guide for the proposed system.
- **Maintenance** - The life of the system which includes changes and enhancements. The software will be developed to accommodate changes that could happen during the post implementation period.

Change Management

The information systems for any business are very difficult to envisage in its completeness at the outset. The IT needs for any business evolve as the business users' work with the IT systems for a period of time and new opportunities are spotted. By this time perhaps the architecture for the system has been more or less standardized and the system development would be in advanced stages. Adding more functionality at this point in time results into a substantial rework and results in the budget and schedule going haywire.

This is the classic area of contention amongst the development team and the user community. We would like to follow a process based approach, wherein we can gather as many requirements as we can identify in the requirements gathering and analysis phase and implement it as per the schedule outlined above.

While this is in progress, there will be many more ideas that can come up. All these requirements/ideas will undergo the change management process. The salient features of this process:

- A change control board (CCB) will be set up at the start of the project. The CCB will be the sole authority to determine which new requirements need to be implemented. The CCB can consist of two members. One senior authority from client and the GM-Technical of E-Square
- Subsequent requirements to be collected and periodically presented to the CCB.
- The CCB would discuss these new requirements for inclusion in the project along with its criticality and impact on cost and schedule
- For each such requirement, representative of client will provide the criticality and need, whereas the E-Square representative will provide the cost and schedule impact to the CCB
- CCB will need to strike the balance between the critical need for the requirement and the cost & schedule
- The complete “Change Management Process” will be formalized during the first month of the project start