

Software Development Process and approach

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1. Overview

These notes are meant as reference and guidelines for SCR SOFT Program Management team members or anyone else in SCR SOFT who use or contribute to systems development process documents or planning.

Guidelines

This is meant as a guideline. No two projects are alike. The Project manager is responsible for being thoughtful about the process: what documents are appropriate for this project? What phases are appropriate for this project? In addition to tailoring the process to fit the project, the Program Manager should also tailor the process to fit the individuals and skill set of the project team. A lower level of experience in a team member indicates extra detail in the documentation in that area. When in doubt, err on the side of more documentation, more detail.

First steps

The process and document outlined here is fairly generic. The SCR SOFT culture and experience of our colleagues will shape this process. These notes and the document templates will be upgraded over time, and should never be considered 'final'.

Team Approach

As we move into implementing standard process and standard documentation for our development projects, Project Managers should not develop the documentation, project, and communication plans in a vacuum. Both within the Program Management team and externally, SCR SOFT has a group of colleagues who can review documents, comment on timelines, and contribute to the effectiveness of that project's Project Management. There should be both formal and informal peer and management review of how the process is being implemented for this project. Formal: At the end of the Requirements Gathering Phase, and again at the end of the project, there should be scheduled meetings to review the process. These are described in these Deliverables Notes. Informal: at any time in the process, we should feel free to schedule brief

meetings with one or more colleagues, to get their input. For complex projects, consider asking a colleague not connected with this product to review, as a test of the clarity of the documents. Colleagues available for review are:

XXX

YYY

ZZZ

These Notes

Are organized by project phase. For every phase, I discuss documents and milestones for that phase. If useful, I also list an order of tasks for project management. Each phase should have a milestone for completion.

Waterfall vs. Iteration

The Notes and the documents are structured in a 'waterfall' fashion. This is not because we believe all projects work in a way where the phases are sequential. Some do, many do not. Frequently requirements gathering for phase 2 of a project functionality is taking place at the same time as coding for phase 1 functionality, for example. It is the responsibility of the Project Manager to modify the project plan to accurately reflect the timelines for THIS project. Iterative development creates a more complex job for the Project Manager. Documentation of business requirements and system design for each phase is even more vital.

2. Initiation Phase

Project Proposal

- Document.
- Template in Shared/Shared Documentation/Process Templates
Each section has comments.
- This document should be completed between the Product Manager (or other Business requestor) and Program Manager.

Prioritization / Queue Update

- Milestone /Document update.
- Each Product has a project queue, in priority order. This document is maintained by the Program Manager and approved by the Product Manager. This queue is managed and dates assigned assuming a set level of allocated resources for every product area. This project, once approved, gets placed in the queue in its priority relative to other projects. If the 'dashboard' format is not used as the queue, this must also be updated.

Phase steps:

1. Project Proposal document is complete and approved by Product Manager
2. Preliminary Prioritization / Queue update. If the Product Manager agrees to the shifting of due dates in projects now a lower priority, no further decision is required.
3. Management Approval meeting. If additional resources are recommended (because Product Manager will not shift due dates of existing projects in queue), a Management Approval meeting should be called at which this project is presented by Product Manager and Program Manager. Decision team includes VP Marketing, VP E & O, and CEO. This team can, if the project is approved, either
 - allocate existing resources from another product to this project,
 - approve hiring of additional resources, or
 - modify recommended prioritization of projects for this product so as to continue product development with existing allocated team.
4. Finalization of Queue
5. Communication of modified Queue to Product team and Management

Time to accomplish Phase:

Creation of these documents should take only a few days to accomplish. The parts of the Project Proposal doc that require quantification should be approximate. Review with teammates for a reality check. Include time in sizings for increased development from clarification of requirements. If a Management Approval Meeting is called for, that will push the time frame longer. Some initial requirements gathering can be done in the mean time.

Initiation Phase is completed when:

- Project has been approved
- Project has been prioritized among other projects on the product queue

3. Requirements Gathering Phase

Requirements Documentation

- Document.
- Template in Shared/Shared Documentation/Process Templates
- This includes Business and Functional Requirements. For complex projects, or very new functionality, a separate Marketing Requirements Document (MRD) and Functional Specifications may be appropriate. The template provided includes sections that need not be filled out for every project. For instance, if this project consisted solely of database/processing changes, there would be no documentation of front-end requirements.
- Consider Business and Functional Use cases where possible. We have templates.
- Where a project includes multiple functionality improvements and a phased approach is acceptable to Product Management, obtain priority of functionality to be used in scheduling the phases.
- This document is compiled by the Program Manager, unless the Product Manager can complete it. Information to be put into this format should come from Business members on the team.

- Sign-off on this document is by the Product Manager. QA and development team members should also review thoroughly and request clarification of any area they feel is not sufficiently complete to perform their parts of the process.

Project Deliverables

- Document.
- Template in Shared/Shared Documentation/Process Templates.
- The purpose of this document is to have a single place that clearly shows the documents and milestones for this project and which project team members have responsibility around those documents and milestones.
- This document, like the others, is a template. Add or subtract documents or milestones. Add or subtract organizational areas of SCR SOFT involved in this project.
- This document should be created in conjunction with an initial project plan by the Program Manager, but every team member listed on the document must agree to that role.

Project Plan

- Document.
- Template in Shared/Shared Documentation/Process Templates.
- This template includes document sections and milestones that will not be necessary for every project. Review requirements and come up with a draft plan to review with the team. Sizings for development efforts cannot, of course be finalized until the system design is completed.
- **** The plan is laid out in a 'waterfall' fashion. It is recommended in all moderately complex to complex projects, that the development effort be phased in. This will mean not only repetitive cycles of development, but most likely also phases of requirements. A reasonable scenario would include detailed requirements being developed for a subsequent phase

at the same time as development was progressing on the initial phase, etc. This requires more complex project management.

Other Project Planning documents to be developed in this phase:

- Project Team. The Program Manager should document all team members, and their role. This team list should be updated periodically through the project life cycle. Use this list as a communication list; send information to and include in meetings more rather than fewer team members. For a project lasting more than a month, consider setting up a project mail group. Remember if the project changes or enhances client information or functionality, Client Services should be involved from the beginning so that they can plan training efforts.
- Communication plan. This should be developed by the Program Manager and approved by the Product Manager. Include:
 - Project status meetings. Weekly, as default. Provide minutes.
 - E-mail updates to project team. How frequently?
 - Management communication. What, in addition to update of the dashboard, is required? Are summarized minutes of project status meetings enough?
 - Communication of documentation location: set up project folder on shared disk.

Review the Communications plan after the project is underway. Does every member of the team have a good idea of the project goals and tasks? Does Management feel as if they are adequately informed? Modify if necessary, and if there is a severe communications breakdown, institute daily brief updates for whoever feels not sufficiently informed.

Phase steps/Notes:

1. Creation of the documents above can be done in parallel.
2. The Project Deliverables should be finalized, or almost so, during this phase. For instance, the responsibility for providing business requirements will probably fall on the same party(ies) no matter how the project is phased.

3. The Project Plan will be a draft version, with a stab at phases of delivery of functionality.

Requirements Gathering Phase is completed when:

- Requirements Documentation is complete and signed off by all parties with 'S' in Project deliverables doc (in general, this document must be crystal clear to every member on the project team. Developers will use it for the System design. QA will use it to develop test cases.)
- Project Planning documents have been developed and reviewed by the Project team. Program Management should also have a peer or management review.

4. Design Phase

Systems Design Document

- Document.
- Template in Shared/Shared Documentation/Process Templates
- Sections in the template are commented. Include those needed, with more detail for complex projects and less for simple projects. Depending on the project, some of the sections may not be needed e.g., for a database development project, omit front-end functionality design sections.
- As we do not have complete and standard Product documentation, this document should err on the side of completeness. As we develop our library of Product system documentation, reference may be made to those documents where the project includes an enhancement or change to an existing part of the system.

Strategic Quality Plan

- Document.
- Template in QA folder
- This document will be completed by QA staff.

Project Plan update

- Milestone.
- The Program manager obtains sizings from the technical staff for accomplishing the systems design and updates the WAGs put as placeholders in the project plan. This is also the time to revising suggested phasing of functionality in earlier documents.
- If what was learned in the technical analysis necessary to create the systems design documentation would suggest an alternate phasing of functionality, schedule a project team meeting to review and agree on phases. Document change in priority from the one listed in the Requirements Documentation.

Design Phase is completed when:

- Design document is completed and signed off by relevant parties.
- At this point a meeting should be held with Product Management, to review sizings/cost/timeframe to develop this project. Product Management should confirm approval to develop and relative priority in the Product queue.

5. Development Phase(s)

The major activity in this/these phases is the actual development/coding. If the prior phases are done appropriately, this phase will be the smoothest for the Project manager and also have the shortest time frame.

Test Plan

- Document
- Template available in QA folder

- This document will be written by QA staff

Issues Tracking Log

- Document.
- Template in Shared/Shared Documentation/Process Templates
- The Project Manager should have an organized way to record issues and track progress to their resolution. Information from this Log should be communicated regularly to the Project team and management.

Walkthroughs/Code Review

- Milestone.
- Make sure these have been accomplished as called for. Technical Leads of the development teams are responsible for accomplishing these, but it would behoove the Project Manager to ask about when they are scheduled.

A Development Phase is completed when:

- Development staff turn a specific set of code (documented) over to QA for testing. QA will provide a description of the 'build' documentation required.

6. System Testing Phase

This phase is 'owned' by the QA staff, but the Project manager should check with them frequently. As issues are documented, the Project manager can lead the investigation and manage the resolution.

Test Report

- Document
- Template to be provided by QA

Deficiency Report

- Document
- Template to be provided by QA

Hand-off to Production

- Milestone
- QA signs off on code/content.

7. Implementation Phase

Task List

- Document.
- We need a template / example.

Training

- Milestone.
- If complex functionality, need a training plan document and process to implement.
- If internal usage, training can take place within the project team. If external, Client Services needs to be trained first, then they will train clients.

Product Documentation updated

- Milestone
- Program Manager is responsible for updating our Product Documentation, including System documentation and Production Process documentation. If this is a new product, these documents should be created. See 'Product Documentation' doc.

Hand-off to Production

- Milestone.
- Celebration.

Project Evaluation Report

- Document.
- Template in Shared/Shared Documentation/Process Templates
- This document is prepared by the Program Manager and shared with the rest of Program Management (and other interested parties) as part of a review of our practices.