Ponder 07

CMM Level 1 -> 2

# Waterfall

## Aspect of the Approach – Plan, Control and Monitor Testing

“Without question the biggest user of project resources, whether it be manpower, computer time, or management judgement, is the test phase. It is the phase of greatest risk in terms of dollars and schedule.” [1] Testing involves visual inspection, testing every logic path, and determining when to do the final checkout. [1]

## Key Process Area – Software Quality Assurance

“The purpose of Software Quality Assurance is to provide management with appropriate visibility into the process being used by the software project and of the products being built. Software Quality Assurance is an integral part of most software engineering and management processes.” [2]

## Help

The practice of testing your code increases the quality of your software project, especially when compared to the Code & Fix method. Without testing, the odds of being able to repeatedly deliver quality software are next to nil. As repeatability is the emphasis of level 2, this aspect of waterfall is a great help in moving a company from level one to level two.

# Spiral Model

## Aspect of the Approach – Flexible, Risk-Based Planning

“The spiral model can accommodate most previous models as special cases and further provides guidance as to which combination of previous models best fits a given software situation.” [3]   
“Each cycle of the spiral begins with the identification of the objectives of the portion of the product being elaborated (performance, functionality, ability to accommodate change, etc.); the alternative means of implementing this portion of the product (design A, design B, reuse, buy, etc.); and the constraints imposed on the application of the alternatives (cost, schedule, interface, etc.)” [3]

## Key Process Area – Software Project Planning

“The purpose of Software Project Planning is to establish reasonable plans for performing the software engineering and for managing the software project. These plans are the necessary foundation for managing the software project (as described in Software Project Tracking and Oversight). Without realistic plans, effective project management cannot be implemented.” [2]

## Help

By focusing on the risks inherent to a given project, the Spiral model is able to develop reasonable plans that are tailored directly for that project. Being able to adopt, in part or in full, other methods of software development to mitigate the risks of a particular project allows the Spiral method to excel at software project planning. Fulfilling the key process area of software project planning helps mature a company to level two.

# Extreme Programming

## Aspect of the Approach – User Stories written by On-site customer

“User stories serve the same purpose as use cases but are not the same. They are used to create time estimates for the release planning meeting. They are also used instead of a large requirements document. User Stories are written by the customers” [4]

“An on-site customer is a must and a valuable recipient of numerous rapid feedbacks in unit-testing and task-estimations.” [5] “Functional tests are written by customers to convince themselves that a system as a whole works as it is expected to.” [5]

## Key Process Area – Requirements Management

“The purpose of Requirements Management is to establish a common understanding between the customer and the software project of the customer's requirements that will be addressed by the software project. This agreement with the customer is the basis for planning (as described in Software Project Planning) and managing (as described in Software Project Tracking and Oversight) the software project. Control of the relationship with the customer depends on following an effective change control process (as described in Software Configuration Management)” [2]

## Help

Given that a customer sends a product expert rather than their least valuable team member, having the customer on site who writes the user stories (XP’s form of requirements) themselves, and then writes the functional tests to make sure their requirements are met, strongly increases the likelihood that there is a common understanding between the customer and the software project regarding requirements. [4,5] Meeting the requirements management key process area helps further a company from level one to level two.

# SCRUM

## Aspect of the Approach – Sprint Review Meeting

“After Sprint execution, the team holds a Sprint Review Meeting to demonstrate a working product increment to the Product Owner and everyone else who is interested. The meeting should feature a live demonstration, not a report. After the demonstration, the Product Owner reviews the commitments made at the Sprint Planning Meeting and declares which items he now considers done.” [6]

## Key Process Area – Project Tracking and Oversight

“The purpose of Software Project Tracking and Oversight is to establish adequate visibility into actual progress so that management can take effective actions when the software project's performance deviates significantly from the software plans.” [2]

## Help

By holding a review meeting at the end of each sprint where the working product is demonstrated live, management will have a good grasp on the progress of the project at regular intervals through the project. If the project begins to deviate, they will be able to notice it sooner and be better able to correct the deviation before it becomes too entrenched in the project. Satisfying the project tracking and oversight key process helps mature a company to level two.

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