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CMM Level 1 to CMM Level 2

**Waterfall**

1. Help

2. Requirements Management

3. The Waterfall approach to software development has several features that support migration from CMM level 1 to CMM level 2. All the requirements to get to level 2 focus on establishing management techniques that will facilitate panning ahead to deal with avoiding potential problems. This is in contrast to the level 1 characteristic of dealing with problems as they arise. A very large part of this process is requirements management. If the requirements are understood and kept under control, potential disasters can be foreseen and minimized. The Waterfall approach in particular is well equipped to deal with this aspect due to its strict documentation and complete-planning policies. Before the product can be coded, it must be planned. By focusing on development of the current product, the Waterfall method pushes changes off until after the delivery phase. This will help keep the level 1 organization on task with established requirements, and minimize the complexities of changing requirements that the organization may not be well-equipped to deal with at this level.

**Evolutionary Prototyping/Delivery**

1. Hinder

2. Project Planning

3. The Evolutionary approach to software development is focused on embracing changing requirements during the development phase as opposed to pushing off changes to the maintenance phase. Also, documentation is typically minimized in the Evolutionary approach. This will be a problem when it comes to becoming a level 2 organization. While the Evolutionary approach is useful in developing certain types of products, a level 1 organization would be ill-equipped to plan without extensive documentation. This style of development would thus amplify the need for the “firefighting strategy” that characterizes the level 1 organization and in so doing, hold back the process of migration to level 2.

**Spiral**

1. Help

2. Configuration Management

3. The Spiral Model focuses on managing risk by selecting the appropriate tools and strategies to avoid unnecessary risk. This focus of the Spiral Model greatly helps in the area of Configuration Management. A level 1 organization may not have the experience or the recourses to deal with great risk in the same way a higher level organization could. The Spiral Model would be of use to ensure that proper tools and strategies are employed to the project. This is the very goal of configuration management. Configuration management is focused on matching the ideal environment and tools with the needs of a project. By employing the Spiral Model appropriately, an organization can be confident in the project’s configuration, and will thus be more effective in its pursuit of becoming a level 2 organization.

**Extreme Programming**

1. Hinder

2. Project Planning

3. Extreme Programming is focused on maximizing software quality, and dealing with changing requirements. It is considered a type of agile approach to software development. For example, like other types of agile methodologies, use of Extreme Programming expects frequent releases of the product. This is difficult to plan for. Other features of Extreme Programming, such as possibly doing Pair Programming, focus on developer strategies and have little to do with more of the managerial aspects which help migrate from level 1 to level 2. Dynamic approaches, such as Extreme Programming, make planning for changing requirements difficult at best. This is not desirable for an organization that needs to gain experience in project planning. Extreme Programming would hinder an organization in pursuit of level 2 in much the same way that an Evolutionary approach would.