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**The Capability Maturity Model for Software Summary**

**Important Points from Article**

* “This paper stresses the need for a process maturity framework to prioritize improvement actions, describes the five maturity levels, key process areas and their common features and discusses future direction for the CMM” [345]
* “After decades of unfulfilled promises about productivity and quality gains from applying new software methodologies and technologies, organizations are realizing that their fundamental problem is the inability to manage the software process.” [345]
* “The CMM presents sets of recommended practices in a number of key process areas that have been shown to enhance software process capability. The CMM is based on knowledge acquired from software process assessments and extensive feedback from both industry and government.” [346]
* “The CMM was designed to guide software organizations in selecting process improvement strategies by determining current process maturity and identifying the most critical issues for software quality and process improvement.” [246]
* “A software process can be defined as a set of activities, methods, practices and transformations that people use to develop and maintain software and the associated products (for instance, project plans, design documents, code, test cases, and user manuals).” [346]
* “Software process capability describes the range of expected results that can be achieved by following a software process.” [346]
* “Software process performance represents the actual results achieved by following a software process.” [346]
* “Organizing the CMM into the five levels shown in Figure 2.1 priorities improvement actions for increasing software process maturity.” [347]
* “These five levels reflect the fact that the CMM is a model for improving the capability of software organizations. The priorities in the CMM, as express by these levels, are not directed at individual projects.” [348]
* “The CMM focuses on process that are of value across the organization.” [348]
* “At the initial Level, the organization typically does not provide a stable environment for developing and maintaining software.” [348]
* “Success in Level 1 organizations depend on the competence and heroics of the people in the organization and cannot be repeated unless the same competent individuals are assigned to the next project. Thus, at Level 1, capability is a characteristic of the individuals, not of the organization.” [348]
* “At the Repeatable Level, policies for managing a software project and procedures to implement those policies are established. Planning and managing new projects is based on experience with similar projects.” [348]
* “At the Defined Level, a standard process (or processes) for developing and maintaining software is documented and used across the organization.” [349]
* “At the Managed Level, the organization sets quantitative quality goals for both software products and processes” [349]
* “At the Optimizing Level, the entire organization is focused on continuous process improvement. The organization has the means to identify weaknesses and strengthen the process proactively, with the goals of preventing defects and improving efficiency.” [349]
* “An organization’s software process maturity helps predict a project’s ability to meet its goals.” [350]
* “The first improvement expected as an organization matures is in predictability.” [351]
* “The second improvement is in control.” [351]
* “The third improvement is in effectiveness.” [351]
* “Trying to skip maturity levels may be counterproductive because each maturity level in the CMM forms a foundation from which to achieve the next level.” [351]
* “The decomposition of each maturity level ranges from abstract summaries of each level down to their operational definition in the key practices, as shown in Figure 3.1.” [352]
* “Except for Level 1, each maturity level is decomposed into several key process areas that indicate where an organization should focus on to improve its software process.” [353]
* “The key process areas at Level 2 focus on the software project’s concerns related to establishing basic project management controls.” [354]
* “The key process areas at Level 3 address both project and organizational issues, as the organization establishes an infrastructure that institutionalizes effective software engineering and management processes across all projects.” [354]
* “The key process areas at Level 4 focus on stablishing a quantitative understanding of both the software and the software work products being built.” [354-455]
* “The key process areas at Level 5 cover the issues that both the organization and the projects must address to implement continuous and measurable software process improvement.” [355]
* “The CMM represents a ‘common sense engineering’ approach to software process improvement. The maturity levels, key process areas, common features, and key practices have been extensively discussed and reviewed within the software community.” [356]

**Things I Didn't Agree With**

“Setting sensible goals for process improvement requires an understanding of the difference between immature and mature software organizations. In an immature software organization, software processes are generally improvised by practitioners and their management during the course of the project.” [346]

I understand this statement by our authors as them saying immature organizations cannot set sensible goals. Immature organizations can set sensible goals while working on their projects, they just have a harder time bringing these goals to fruition. The goals could be met by certain individuals at the immature organization.

**Things I Did Not Understand**

I understood everything in this article.