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Book Review

The People Capability Maturity Model: Guidelines for Improving the Workforce
by Bill Curtis, William E. Hefley, and Sally A. Miller (Editors)

Addison-Wesley, 2001
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(587 Pages)

In recent years, many software companies around the world have adapted the highly successful *Capability Maturity Model for Software* (SW-CMM) to guide software process improvement programs. The model, elaborated by the Software Engineering Institute (SEI) at Carnegie Mellon University in 1991, is a staged process: At every stage (maturity level), it establishes a foundation of practices. Each successive stage leverages the practices laid out in earlier stages to implement increasingly sophisticated practices.

The SW-CMM has one big problem, though: It is *technology focused,* not *people focused.* When a severe workforce shortage struck the software industry in the 1990s, it raised new issues for companies: high turnover; increased workloads and stress; escalating salaries and benefits. These were issues that the SW-CMM was not designed to cope with, so in 1995, SEI developed a new framework to improve workforce practices, especially in knowledge-intensive organizations. This framework, the People Capability Maturity Model (P-CMM), is designed to help organizations address their critical people issues by improving the capability of their workforce.

This book from Addison-Wesley serves as an excellent guide to help organizations understand and successfully implement the P-CMM. It is authoritative and provides a good understanding of the concepts behind P-CMM. And it comes straight from the horse's mouth, so to speak: Bill Curtis was the principal architect and author of P-CMM, William E. Hefley is a resident affiliate of the SEI, and Sally A. Miller is a member of the SEI technical staff. The book does a great job of explaining not only the concepts, but also the principles that define the model. In addition, it offers suggestions on how to go about implementing the model and interpreting the results.

The book is divided into three parts. The first part is an overview of the structure and concepts of the model, as well as how to use it. It advises

organizations on how to interpret and best apply the P-CMM and its practices. It includes brief case studies on organizations that have successfully implemented the P-CMM, and explains how it has helped them develop a more effective and efficient workforce.

The second part describes the practices that correspond to each maturity level in the P-CMM, focusing on the framework within which they can deliver sustainable results for the organization.

The third part, the Appendices, includes a useful section on goal mapping. This can help an organization assess whether or not a practice has been successfully implemented, and to evaluate results.

Levels of the P-CMM

The P-CMM, like other capability maturity models, is a staged model for organizational change. It consists of five *maturity levels*. Each successive level represents a higher level of organizational capability, created by implementing a new system of workforce practices and processes. The model helps establish a program that tightly integrates workforce development with process improvement. I will try to sum up my understanding of the P-CMM maturity levels as described in the book.

1. **Level 1 (Initial)**. Inconsistent practices, an emotionally detached workforce, and displacement of responsibility characterize this level. There is a lack of common vision about management responsibilities as well as high employee turnover.

2. **Level 2 (Managed)**. The goal of this level is to integrate basic management discipline into workforce activities through repeatable practices. Organizations focus on practices such as effective staff recruitment and equitable compensation, coordinating commitments, providing resources, and developing skills.

3. **Level 3 (Defined)**. At the defined level, organizations identify core competencies and align these with workforce activities. They develop an infrastructure by building on practices from the previous level, and tie the workforce's capability to strategic business objectives. The key process areas at this level are workforce planning, competency development, career development, performance alignment, knowledge and skill analysis, and a participatory culture.

4. **Level 4 (Predictable)**. At level four, organizations quantitatively manage organizational growth in workforce capabilities and establish competency-based teams. They exploit the capability created within the organization by implementing key processes such as mentoring, team building, team-based practices, organizational competency management, and organizational performance alignment. Organizations increase the level of predictability for their operations by following practices with measurable results that are supported by all levels of management.

5. **Level 5 (Optimizing level)**. Organizations need to continuously improve methods for developing personal and organizational

competence to achieve this ultimate level. The entire organization focuses on continual improvements at this level -- and processes such as personal competency development, coaching, and workforce improvements help achieve this continuity.

The book explains these maturity levels well and makes them easy to understand. Although you can, on your own, sift through a lot of material about P-CMM that is available on the Web, the editors save you a lot of time by consolidating the most important points and carefully explaining the model's structure. They also emphasize that, across all the maturity levels, the model pursues the following strategic objectives:

- Improve the capability of organizations by increasing the capability of their staff.
- Ensure that software development capability is an attribute of the organization rather than of a few individuals.
- Align the motivation of the staff with that of the organization.
- Retain assets (people) within the organization.

Interpreting the P-CMM

One section in the book talks about interpreting the P-CMM. This is extremely important, because the key to the model is accurate interpretation of results, goals, and practices. The editors discuss how different organizational factors such as size, composition of the workforce, and business objectives need to be considered, both while using the P-CMM, and while assessing the impact of the practices. They point out that the P-CMM does not establish minimal criteria for implementing workforce practices; rather, it lists certain required preconditions and then leaves organizations a lot of leeway with the implementation.

There is an interesting discussion on how a practice can be measured. Some measurements are an inherent part of the process area, whereas others might be required to determine the status of an implementation or the effectiveness of practices. It is sometimes important to aggregate the results of these measurements, so that the goals can be analyzed at the organizational level.

The book also warns about perceiving the various maturity levels as stable states. The editors point out that if workforce competencies are not consistently updated and renewed, then the organization's capability soon degrades to a lower level. Another mistake that some organizations make is to succumb to what the editors call "level fever": Attaining level maturity becomes more important than achieving the business benefits. This can cause an organization to lose focus, and may lead to incorrect, and sometimes over-zealous, assessment.

Another thing the book emphasizes is that the activities in various process areas need not be carried out in order. An organization can elect to proceed with an activity at a higher level if it derives substantial benefit from it. However, skipping a level completely is not advisable; it is the

equivalent of constructing a house without a foundation. The processes at lower levels need to be stable before an organization can successfully move to the next, higher level.

This book provides a structured approach to dealing with some of the common problems faced by managers. These include issues such as communication, compensation, performance management, and training and development of employees. In the course of discussing the performance management process at the *Managed Level* (Level 2), the book lists the resources required by managers and describes the training managers should receive; it also suggests practices that lead to effective performance management. These practices include measurable performance objectives, ongoing communication between manager and employee, periodic and event-driven reviews, and detailed documentation of employee accomplishments against their performance objectives.

One thing that's missing from the book is a detailed case study of how an organization actually "matured" by adopting the P-CMM: how it adopted the processes and practices, and in what order; how closely it adhered to the recommended guidelines; and how it reflected on the company's bottom line. In addition, the book concentrated mostly on high-tech companies. It would have been interesting to see how this framework relates to older, more traditional industries; there was not much discussion about whether the model is even applicable to those industries.

Despite these minor objections, however, I would strongly recommend this book. It is exactly what the title says: an excellent guide for "improving the workforce." Moreover, it is a fantastic reference on management issues that crop up ever so often in the workplace.

-**Tanuj Vohra**
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