

# The Adoption and Transformation of Capability Maturity Models in Government

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## INTRODUCTION

The Information Technology (IT) field has long been criticized as having problems with the quality of goods and services it produces. Gartner in its annual “Assessment of IT Practices” observes that about three-fourths of software projects “failed,” judging on cost, reliability, usability and timeliness.

Organizations, concerned about quality, stimulated the creation of models, frameworks or approaches that would “improve the quality” of the goods and services produced. Carnegie Mellon University’s (CMU) Capability Maturity Model (CMM), along with numerous subsequent competing and complimentary approaches, was launched to fill this need. CMM was developed for the US Department of Defense (DOD), making it a major quality improvement tool in government.

CMM would be eventually adopted by many governments around the globe in whole or in part. Analysts began applying CMM not only to IT operations and software development, but also in everything from risk through financial to innovation management. CMM soon led to a variety of *ad hoc*, derivative, hybrid, imitations or customizations by various governments, professional associations, vendors, researchers, and consulting firms, all based on capability maturity models.

The diffusion and modification of CMM seems similar to Xerox and photocopying. Xerox perfected photocopying technology and then dominated the market to such an extent that a Xerox became synonymous with a photocopy.

There are now hundreds of capacity maturity models around, but many, maybe most, are very different from CMU’s.

CMM has exploded in recent years as a quality improvement methodology. But there is much disagreement among practitioners, researchers, and theorists in the fields of IT, public management, and business over what works, what does not and why.

This entry looks at the variety of CMM government applications, asking: What is the basic methodology underlying CMM; how did other quality improvement initiatives generally and in government contribute to CMM’s development; what models currently compete in the CMM space; how are CMMs used in government; what problems, issues and controversies surround CMM as an approach and how can these be corrected; and what might constitute a future research agenda in the field?

## BACKGROUND

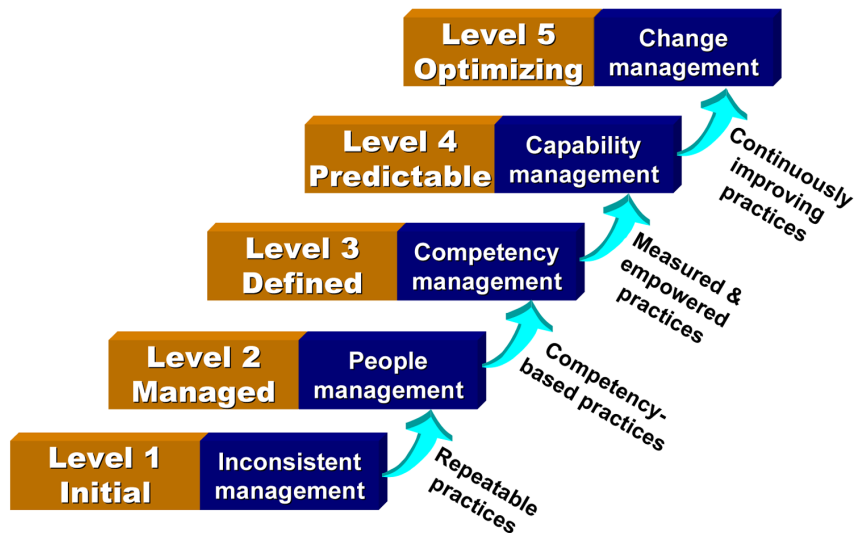
### The CMM Methodology

Most, if not all, CMM frameworks have the same basic methodology. This is how the CMU’s Software Engineering Institute’s CMM model works in the context of human resource management (P-CMM) (Curtis, Hefley, Miller, 2009).

The model’s purpose is to “help organizations characterize the maturity of their workforce practices, establish a program of continuous workforce development, set priorities for improvement

Figure 1. The five maturity levels of the P-CMM<sup>1</sup>

Source: Curtis, Hefley, Miller (2009).



actions, integrate workforce development with process improvement, and establish a culture of excellence”(p.8).

The model “consists of five maturity levels, or evolutionary stages, through which an organization’s workforce practices and processes evolve. At each maturity level, a new system of practices is added to those implemented at earlier levels. Each overlay of practices raises the level of sophistication through which the organization develops its workforce.”

“Each maturity level consists of three to seven process areas, identifying a cluster of related practices that, when performed collectively, achieve a set of goals considered important for enhancing workforce capability. Each process area organizes a set of interrelated practices in a critical area of workforce management, such as staffing, compensation, or workgroup development” (p.45). Process areas are linked to specific measurable goals to be achieved for each maturity level.

The model is grounded in standard process improvement practices common to most high performing, successful organizations. The model is best-practices based. These serve as a reference model against which an organization’s process

improvements are benchmarked. “Workforce practices are standard organizational processes that can be improved continuously through the same methods that have been used to improve other business processes.” This is accomplished by means of a “standard appraisal method for process improvement” (SCAMPI) (p.9). The model is evidence-based.

The model incorporates common best practices, such as:

*... competency modeling, 360° performance reviews, Web-enabled learning, knowledge management, team building, cool space, participatory decision making, incentive-based pay, mentoring, meeting management, and empowered work (p.26).*

## The Quality Improvement Movement

The “quality improvement movement” began after World War II with the work of Edwards Deming (“statistical quality control”) and Joseph Juran (“managing quality”). They sought to improve quality in basic manufacturing as a way to increase customer satisfaction. Total Quality Management (TQM), inspired by Deming and Juran, came into

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