The People Capability Maturity Model
Its Approach and Potential to Improve Workforce Performance

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> or many companies today, talented people are the prime source of competitive advantage.
> —Ed Michaels, Director, McKinsey & Co.
> (Byrne, 1999, p. 108)

Introduction

There is a workforce improvement model, previously constrained to high-technology and knowledge-intensive industries, that is escalating in use, and as a result, is spreading more deeply into the general Human Performance Technology (HPT) context. If your recent work assignments have overlapped significantly with the software industry you may be familiar with at least one of Carnegie Mellon University Software Engineering Institute's (CMU/SEI) Capability Maturity Models® (CMM®). These models fulfill the basic HPT criteria of a systematic and systemic approach for enhancing human performance. Such models (1) focus upon the performance of people, (2) take a systematic view of performance and its context, (3) value measured results, and (4) seek implementation of repeatable practices (Cassidy & Medsker, 2003, p. 3).

The People Capability Maturity Model® (People CMM®) advocates a staged approach to organizational change. Developed by the Carnegie Mellon University Software Engineering Institute, this model seeks to bring discipline to the people side of management by promoting a structured, repeatable, and predictable approach for improving an organization's workforce-related processes. A system of best practice processes, and associated practices, holds potential for changing an organization's culture from that of an "ad-hoc"racy to one pursuing workforce excellence. This article introduces Human Performance Technology professionals to the model, its approach, and its potential to improve workforce performance.

HPT is defined as "systems thinking applied to human resource activities" (Rosenberg, 1996, p. 373). CMMs subscribe to this approach, specifically, by helping organizations, and especially managers, focus upon inputs to work processes and the analysis of output and results from such processes.

The goal of each CMU/SEI CMM aligns directly with the International Society for Performance Improvement's (ISPI) mission "to improve the performance of individuals and organizations." CMM goals are also consistent with HPT's stated objective to help managers and workers "perform their jobs more effectively in order to improve both organizational performance and worker satisfaction" (O'Driscoll, 2003, pp. 10, 13). This article informs HPT professionals about the People Capability Maturity Model® (People CMM®) and the model's stated purpose of "making lasting gains in performance and competitiveness" (Curtis, Hefley, & Miller, 1995, p. 5).

As a derivative of CMMs, the People CMM is a model that HPT academics and practitioners should consider. However, professionals may find it hard to become quickly familiar with this model since there is no method for rapidly familiarizing oneself with the model, its approach, and its potential for improving the capability of the workforce (Wademan, 2005, p. 13). To assist HPT professionals, this article provides a brief introduction to the: (1) development of CMMs, (2) structure of the People CMM, (3) theoretical foundations for the People CMM, and (4) benefits sought from this workforce management-oriented model.

Before describing development of the initial CMMs or conveying details of the People CMM, it will be helpful to provide a brief overview of major facets of the People CMM. Succinctly stated, the People CMM consists of:

A. Five levels of maturity.
B. Four major theme/objective areas.
C. Twenty-two process areas; each associated with a specific maturity level and aligned under one of four theme/objective areas.
D. More than one implementation goal and a single institutionalization goal for each of the model's twenty-two process areas.
E. Each goal containing a clearly defined set of practices which support realization and sustainability of implemented/enhanced practices.

The following figure (Figure 1) portrays a number of significant facets for the People CMM.

The People CMM is a rather complex and robust model. As a result, some organizations choose to address a single process area at a time. Organizations often engage consultants to help with implementation of the model. As a descriptive (rather than prescriptive) model, the People CMM has been identified as having value for various sizes and kinds of organizations (Curtis, Hefley, & Miller, 2003, p. 1). Companies identified as utilizing the People CMM include BAE Systems, the Boeing Company, Citicorp, Computer Science Corporation, Ericsson, GDE Systems, IBM Global Services, Infosys Technology Ltd., Intel Corporation, Lockheed Martin Corporation, Novo Nordisk A/S, QAI India Ltd., Tata Consultancy Services, the U.S. Army, and Wipro Technologies to name just a few (Wademan, 2005, p. 240).

The following section provides a brief introduction to the development and theoretical foundations for the first CMU/SEI CMM as well as its outgrowth to additional CMMs.

Development of the CMMs

Model's Background
The People CMM is one in a family of CMMs developed by the CMU/SEI. The first of these CMMs was the CMM for Software (SW-CMM®) that "was created to help address the software crisis that existed in the 1980s"

B. Four People CMM Theme/Objective Areas.

A. Five Maturity Levels. *C. Twenty-two Process Areas.*

Maturity Level	People CMM Threads			
	Developing Individual Capability	Building Workgroups & Culture	Motivating & Managing Performance	Shaping the Workforce
5 Optimizing	Continuous Capability Improvement		Organizational Performance Alignment	Continuous Workforce Improvement
4 Predictable	Competency-Based Assets / Mentoring	Competency Integration / Empowered Workgroups	Quantitative Performance Management	Organizational Capability Management
3 Defined	Competency Development / Competency Analysis	Workgroup Development / Participatory Culture	Competency-Based Practices / Career Development	Workforce Planning
2 Managed	Training and Development	Communication and Coordination	Compensation / Performance Management / Work Environment	Staffing
1 Initial	*(This initial maturity level contains no Process Areas)*			

D. Implementation Goals and a single Institutionalization Goal are identified for each of the model's twenty-two Process Areas.

E. Each goal contains a clearly defined set of practices to support realization and sustainability of implemented/enhanced practices.

(Intel Corporation, 2003, p. 2). Developed and supported heavily by the United States Department of Defense, the SW-CMM became so prevalent in government contracting that CMM certification became a prerequisite for bidding on some contracts (Koch, 2004, pp. 49-51).

The goal of this first CMM was to "increase the capability of an organization's software development processes" by reducing defects and increasing productivity in a time when large delays and significant cost overruns were an industry norm (Curtis, Hefley, & Miller, 2002, p. 12). As a result of the value added to initial users such as the defense and aerospace industries, utilization quickly spread into other information-intensive industries including automotive, entertainment, telecommunication, and finance (Curtis, Hefley, & Miller, 2002, pp. 10-11). Deriving reported average returns-on-investment of $5.68 for every $1.00 invested, subsequent CMMs were developed to address closely related topics (Herbsleb, Carleton, Rozum, Siegel, & Zubrow, 1994, p. 14).

As a result of this outgrowth the CMU/SEI's CMM framework "received widespread acceptance as a standard for process modeling and assessment of organizational maturity" (Pennypacker & Grant, 2003, p. 7). The success of this maturity framework ultimately led to the development of additional CMMs (Crawford, 2003, p. 55; Curtis, Hefley, & Miller, 2002, p. 13).

FIGURE 1. Major Facets of the People CMM.

Theoretical Foundations for the CMMs

Foundational concepts leading to the initial SW-CMM were identified by Watts Humphrey and colleagues at IBM in the early 1980s. Humphrey and his colleagues merged concepts from Crosby's *Quality is Free* five stage maturity framework with Shewart-Deming's *Plan-Do-Check-Act* Total Quality Management (TQM) improvement program life cycle. Humphrey observed that streamlining individual processes and reducing impediments to continuous improvement was not enough. As a result, he developed a five-tiered model that focused on changing the organization's behavior (i.e., culture) to support improvement initiatives. Thus, the initial software development model and each CMM thereafter consisted of five stages, with each stage focusing upon increasing the level of maturity for the organization.

Each model developed also emphasized that implemented practices (called *implementation practices*) be repeatable, measurable and continuously improved (Curtis, Hefley, & Miller, 2002, pp. 7-8). Each CMM additionally utilized *institutionalization practices* to increase the likelihood that cultural changes realized and process improvements implemented would be enduring (i.e., sustainable) rather than temporary (Curtis, Hefley, & Miller, 2002, p. 67). As a result, identification and pursuit of these two types of practices became a hallmark for subsequent CMMs developed. [Note: These two practice types have also been referred to as specific practices and generic practices, correspondingly.]

Building upon the success of the initial SW-CMM, the People CMM identifies a model to continually improve basic workforce management practices utilizing the same methods used to improve other business processes (Curtis, Hefley, & Miller, 2002, p. 15). The following section provides an introduction to the structure of the People CMM.

People CMM Structure

People CMM Objectives

People CMM is an organizational change model. Satisfying each level of this five-tiered model serves to transform undisciplined states (of processes and practices) to disciplined states capable of producing predictable results (LeVasseur, 2001, p. 1). Each level satisfied thus transforms the organization into a new culture and to higher levels of organizational capability.

The model seeks to bring discipline into the people side (e.g., Human Resources side) of management by promoting a structured, repeatable, and predictable approach for improving an organization's workforce-related processes. The People CMM is promoted as a documented roadmap or guide for making improvements in both the capability and readiness of an organization's workforce (Curtis, Hefley, & Miller, 2002, p. 74). The model defines processes to assist managers in fulfilling their vital role in people management and seeks to improve the way an organization manages and develops its human resources. The overall goal espoused for this process-

based model is to create a more professional, versatile, and competent workforce. The model advocates that people are often, especially within today's increasingly complex information-age organizations, the organization's most valuable resource, and that the organization must manage its workforce capability as a strategic asset (Miller, 2003, p. 11).

The model is described by its developers as providing "an evolutionary improvement path from *ad hoc*, inconsistently performed workforce practices, to a mature infrastructure of practices for continuously elevating workforce capability" (Curtis, Hefley, & Miller, 2002, p. 4). The model is developed such that each level builds upon the previous level of maturity and requires that users establish a sound foundation before focusing on the next higher level of capability. Thus, each maturity level provides a "successive foundation" for continuously improving talent, developing an effective workforce, and successfully managing the human capital of the organization (Curtis, Hefley, & Miller, 2002, p. 46).

Five Maturity Levels for the People CMM

The first level (Level 1) of the model simply identifies an organization in an immature state. This initial state is characterized by inconsistently applied, non-repeatable workforce processes. In fulfilling Level 2 capabilities the initial foundational aspect that People CMM seeks to address is the organization's people *management* processes. A major emphasis for Level 2 is the significant cultural change where managers *realize and focus their attention* on their organization's most valuable asset–human capital. As People CMM proponents exhort, "the first step in changing this state of affairs is to get managers to take responsibility for the capability and development of those who report to them" (Curtis, Hefley, & Miller, 2002, p. 19). Achieving this is a significant step and major focus in improving an organization's people capability.

One of the main messages at level 2 is to have managers realize that the real work (i.e., the real responsibility) of the manager is not producing results, but rather developing people who can produce results (Curtis, Hefley, & Miller, 2002, p. 18). Level 2 is important in that it not only sets a foundation for the development of employees (a major focus of Level 3) but it also sets the foundation for development of managers; that being, their taking on the appropriate role of identifying and improving the core competencies of the units and workgroups for which they are responsible.

Building upon this foundation, where *managers manage and develop their people*, each successive level (Levels 3, 4, & 5) seeks to increase workforce capability and advance the organization's culture. Identified within the following figure (Figure 2) is each of the five maturity levels, their associated cultural characteristic, as well as their main focus.

Defining Characteristics and Culture

This section provides a brief introduction to defining characteristics and the culture associated with each of the five maturity levels (Curtis, Hefley, & Miller, 2002, pp. 8-27, 520; Curtis, Hefley, & Miller, 2003, pp. 2-3).

Maturity Level	Cultural Characteristic	The Focus of the Five Maturity Levels
5 Optimizing	*Excellence*	Capability and performance are continually improved.
4 Predictable	*Informed*	Capability is managed quantitatively and the organization exploits opportunities in its competency framework.
3 Defined	*Professionalism*	Organization develops a framework of workforce competencies required to accomplish its business objectives.
2 Managed	*Stabilized*	Managers take responsibility for managing and developing their people.
1 Initial	*"ad-hoc"racy*	Workforce practices are applied inconsistently.

Adopted from: TeraQuest (2003). *Introduction to the People CMM, Version 2.0.* slide 2.7

FIGURE 2.
Focus of the five Maturity Levels.

1. Initial

At the Initial maturity level (Level 1), workforce practices are characterized as undocumented, unrepeatable, and inefficient. At this level, managers lack a clearly identified, communicated, and utilized set of effective best practice workforce practices. If workforce practices do exist, they are performed inconsistently or inefficiently, or are used ritualistically, thus failing to achieve their intended results. Within this low-maturity culture, managers lack training and usually must resort to using their intuition in managing their people. This culture can be defined as being an *"ad-hoc"racy*.

2. Managed

At the Managed maturity level (Level 2), managers are trained in managing their people. At this level, repeatable sets of basic workforce practices are established and followed, and a management framework is developed within work units. Managers assume responsibility for managing and developing the personnel reporting to them, including ensuring that personnel reporting to them have the skills and resources required to meet their work commitments. This culture is characterized as a *stabilized* local work environment based on the standard repeatable work practices being utilized.

3. Defined

At the Defined maturity level (Level 3), workforce competencies comprising knowledge, skills, and process abilities are developed and transferred across workgroups. At this level, the organization values its workforce and

manages and develops its people as a strategic asset. Competencies are also aligned with the business strategy and objectives of the organization. In addition, a common organizational framework is established where practices are standardized across units and the organization. Employees benefit from functioning as autonomous individuals working within empowered workgroups. Employees can identify improvement opportunities, pursue career growth, and be rewarded based on work contribution. A participatory culture of *professionalism* is realized through utilization of a common set of best practice processes.

4. Predictable

At the Predictable maturity level (Level 4), data are used to measure, improve, integrate, and predict workforce capabilities. With reduced variability in performance and greater access to information, the organization can strategically manage existing organizational capability, identify future capability requirements, and better plan and exploit business opportunities. At this level empowered individuals and workgroups manage their own performance, employees and managers trust each other and seek mutual benefits, and management focuses more on strategic issue management than operations management. As a result of this level's focus on learning, quantitative measurements, and predictability of performance, the culture can be characterized as one of being *informed*.

5. Optimized

At the Optimized maturity level (Level 5), continuous improvement—the key to an enduring best practices culture—is identified as ongoing. Alignment and maximization of capability is sought between individuals, workgroups and units, and the organization. Lessons learned are communicated, and individuals help manage themselves and their work; initiating improvements dynamically. The organization strives to deploy rapid changes; continuously seeking and exploiting incremental advancements, significant innovations, and new technologies. Based on the higher levels of competencies, and the performance and innovation realized, the culture is characterized as one of continuously pursuing ever higher levels of product, service, and performance *excellence*.

The following graphic representation (Figure 3) provides a brief overview of the cultural change to be achieved for each level.

Four Process Area Threads

The People CMM identifies four theme areas that play a significant role in managing and developing the workforce (Curtis, Hefley, & Miller, 2002, p. 40). They are basically objective areas that run vertically down the columns of the model's matrix layout. These four areas, referred to as process area threads, address the four areas of Developing Individual Capability, Building Workgroups and Culture, Motivating and Managing Performance, and Shaping the Workforce. Figure 4 identifies the model's four major theme

Adopted text from: TeraQuest (2003). *Introduction to the People CMM, Version 2.0.* slides 3.6 & 3.11-3.17.
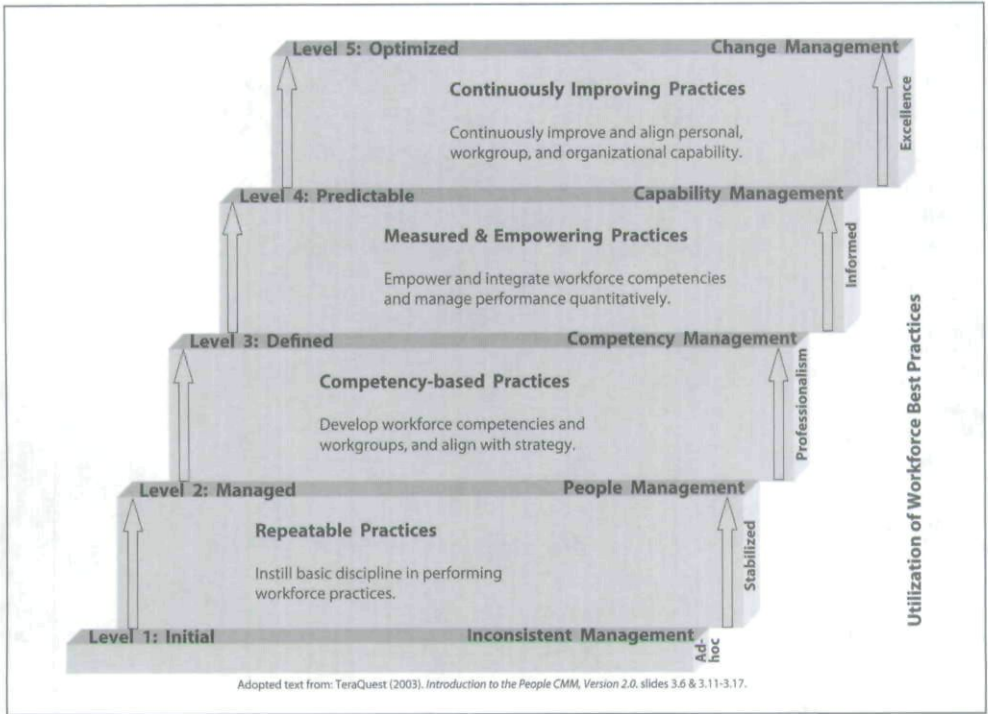
FIGURE 3. Cultural Impacts of the Five Maturity Levels.

or objective areas as well as provides a brief one sentence introduction to some of the significant content addressed within each of these four theme areas (see elliptically encircled items).

The following describes the foundations for each of these four maturity threads (Curtis, Hefley, Miller, & Konrad, 1997, p. 4).

- **Developing Individual Capability.** This maturity thread begins with identifying and addressing current training and development requirements within a unit. It grows to identifying, sharing, and exploiting core competencies required by the organization. It then goes on to empower individuals to establish their own program of professional development.
- **Building Workgroups and Culture.** This maturity thread begins by establishing basic communication and coordination skills. It increases participatory culture and workgroup development through defined processes and greater availability of information. It then continues on in further achievement of efficiencies through empowered workgroups and competency integration.
- **Motivating and Managing Performance.** This maturity thread begins with establishing basic work environment, performance management, and compensation practices for each unit. It builds motivationally upon these practices through career development and competency-based practices. It then optimizes their impacts through measurement of performance and organizational alignment.

Maturity Level	The Four People CMM Threads			
	Developing Individual Capability	Building Workgroups & Culture	Motivating & Managing Performance	Shaping the Workforce
5 Optimizing	Identification of individual training needs and provide required knowledge, skills, and process ability.	Improve coordination and interaction, develop workgroups, develop participatory culture, and empowering people.	Provide a good work environment, enable adequate resources, good compensation strategy, and motivate performance.	Establish basic practices for recruiting and selecting the right candidates, orient them, and create a strategic workforce plan.
4 Predictable				
3 Defined				
2 Managed				

Adapted text from: Das, S. (2003). *People Practices of P-CMM.* Asia SEPG Conference 2003. May 31, 2003. pp. 7-8.

• **Shaping the Workforce.** This maturity thread begins with establishing basic staffing practices. It progresses to utilize workforce planning and development of workforce competencies. It then sets and tracks the desired capability level for the workforce and organization to meet current and future business plans.

People CMM Terminology

How terms are used plays an important part in understanding a model. Four terms heavily utilized in relation to CMMs are competency, capability, process area, and maturity. Each of these four terms are defined within the following paragraphs.

The authors of the model define a workforce *competency* as "a unique integration of knowledge, skills, and process abilities acquired through specialized education or work experience" (Curtis, Hefley, & Miller, 2002, p. 4). The authors define knowledge as "what must be known to perform skills," skills as "what must be done to accomplish work tasks," and process abilities as "how skills are to be performed using the organization's standardized processes" (Curtis, Hefley, & Miller, 2003, p. 3). [Developing and integrating workforce competencies is a major focus of Level 3 and Level 4 of the People CMM.]

Workforce *capability* is defined as "the level of knowledge, skills, and process abilities *available* for performing an organization's business activities" (Curtis, Hefley, & Miller, 2003, p. 4). Workforce capability deals more with the organization's *readiness* for performing critical

business activities, and the likely business results or benefits to be derived from performing such activities (Curtis, Hefley, & Miller, 2003, p. 4). [Increasing organizational capability is a goal for maturity Levels 2 through 5; however, Level 5 heavily focuses upon the necessity to *continuously maintain and improve* personal, workgroup, and organizational capability.]

A *process area* is made up of interrelated groups or clusters of related practices that an organization can implement to improve workforce capability. When "performed collectively," these practices satisfy the goals of the process area, ultimately leading to fulfillment (i.e., satisfaction) of the process areas and a higher level of maturity (i.e., capability) for the organization (Curtis, Hefley, & Miller, 2002, p. 29).

James Persse provides a definition of *maturity* in his software development-oriented CMM (SW-CMM) book *Implementing the Capability Maturity Model*. Persse (2001) equates maturity with predictability, stating that, "the word 'maturity' here means an environment in which predictability is high and risk (the unknown) is low" (p. 4). William Hefley (1996) defines maturity, as it relates to People CMM, as "an organization's ability to consistently improve the knowledge and skills of its staff and align their performance with the organization's objectives" (p. 2).

Having already identified the overall structure of the People CMM as well as four of its most significant terms, the following sections provide further details into the People CMM.

Identifying the Model's Process Areas, Process Area Goals, and Practices

We have already identified the maturity levels that flow horizontally across the model's matrix layout (Figure 3), as well as the process area threads (or themes) that run vertically down the columns of the model (Figure 4). However, there are three additional layers of depth that comprise this rather comprehensive and detailed People CMM. These three deeper model layers of process areas, process area goals, and associated practices are introduced and defined below.

1. Twenty-Two Process Areas

The People CMM consists of twenty-two process areas. Each process area is listed according to its maturity level as well as aligned under the theme area it supports (see Figure 5). With the exception of Level 5 (the topmost level), each process area provides a foundation upon which the next higher-level process area(s) builds.

It is worth noting that, while each process area links vertically with the other process areas aligned under a theme, each process area also interlinks horizontally with each of the process areas across a designated maturity level (Curtis, Hefley, & Miller, 2002, pp. 29-40). For example, at Level 2, Performance Management interlinks with Staffing; and, at Level 3, Competency Development interlinks with Career Development (see connected elliptical circles).

Maturity Level	The Four People CMM Threads			
	Developing Individual Capability	Building Workgroups & Culture	Motivating & Managing Performance	Shaping the Workforce
5 Optimizing	Continuous Capability Improvement		Organizational Performance Alignment	Continuous Workforce Improvement
4 Predictable	Competency-Based Assets Mentoring	Competency Integration Empowered Workgroups	Quantitative Performance Management	Organizational Capability Management
3 Defined	Competency Development Competency Analysis	Workgroup Development Participatory Culture	Competency-Based Practices Career Development	Workforce Planning
2 Managed	Training and Development	Communication and Coordination	Compensation Performance Management Work Environment	Staffing

Adopted from: Curtis, Heftley & Miller (2002). *The People Capability Maturity Model: Guidelines for Improving the Workforce.* p. 41.

2. Process Area Goals for each Process Area

Each of the process areas contains between three and five goals. The purpose of the process area goals is to define "the states that must exist for that process area to have been implemented…in an effective and lasting way" (Curtis, Hefley, & Miller, 2002, p. 48).

Each of the process area goals, with the exception of the last goal (for each process area), are referred to as implementation goals. The last goal is always identified as the institutionalization goal for a process area (Curtis, Hefley, & Miller, 2002, p. 49). The institutionalization goal serves to support the implementation goals for that process area.

3. Practices Associated with the Process Area Goals

Each *implementation goal* contains between two and six *implementation practices*. Such practices are called "practices to be performed," and are simply the activities to be performed to fulfill the specifics of the process area goal.

Each *institutionalization goal* contains between ten and fourteen *institutionalization practices*. Institutionalization practices are referred to as "supporting practices." These institutionalization practices ensure that the requisite infrastructure and resources are available to ensure that implementation practices are "able to be performed" and are "sustainable."

A process area's specified *practices* serve as guides to help an organization identify the policies, procedures, and activities that are "typically implemented" to achieve the process area goals (Curtis, Hefley, & Miller,

2002, p. 54). The following section further defines the institutionalization practices associated with the People CMM.

Delineating the Four Types of Institutionalization Practices

As mentioned above, there are between ten and fourteen institutionalization practices associated with the single institutionalization goal of a process area. Each of these institutionalization practices is associated with one of four institutionalization practice types. The four types or categories of institutionalization practices are Commitment to Perform, Ability to Perform, Measurement and Analysis, and Verifying Implementation. Figure 6 depicts a hypothetical process area. This figure portrays the relationship between implementation goals and practices and institutionalization goals and practices. It also identifies the four different types of institutionalization practices (see circled practices). [Note: "N" identifies the number of levels, process areas, goals, and practices associated with each area.]

Of the four categories of institutionalization practices, the first two categories are considered prerequisite or *enabling*-related practices. Specifically, these practices should be addressed (i.e., secured) as one initiates any improvement for a process area. The last two categories of institutionalization practices are confirming or *enduring*-related practices. These ensure that the "practices to be performed" (implementation practices) continue to be practiced well after their initial implementation or enhancement. These institutionalization practices are critical in ensuring that the requisite

FIGURE 6.
Schematic depicting Implementation and Institutionalization Goals and Practices.

Wademan, M.R. (2005). *Utilizing Development Research to Guide People Capability Maturity Model Adoption Considerations*. Doctoral dissertation, Syracuse University, p. 30.
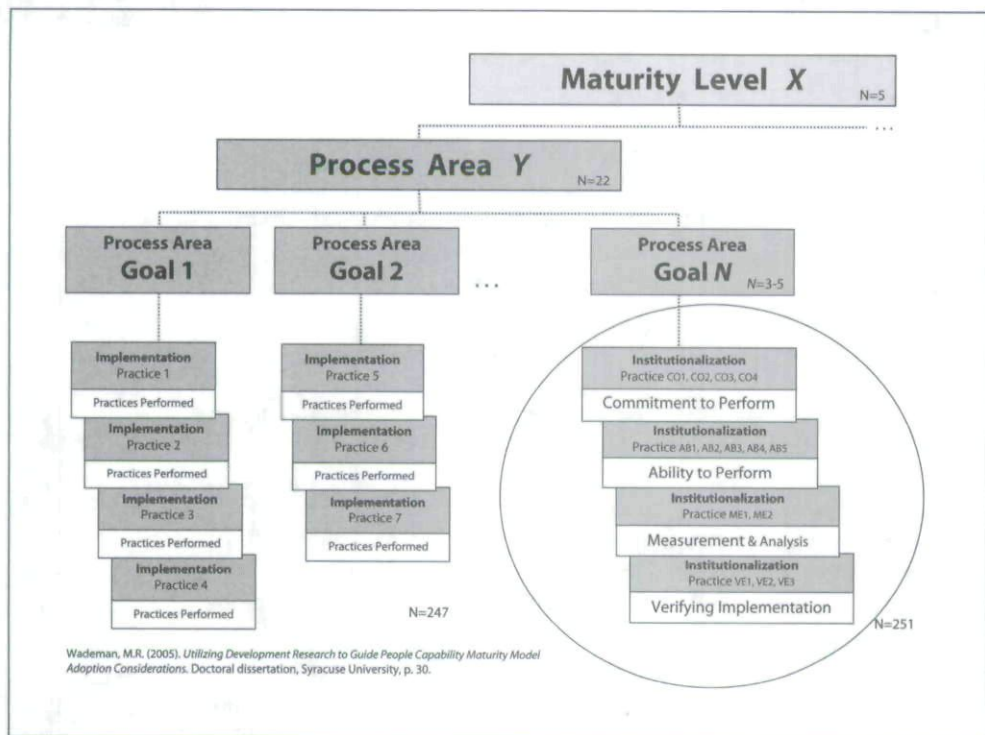
infrastructure—in organizational framework and resources—is available to support not just implementation, but ongoing and even continuous improvement of the implemented practice well after the people or program that implemented them are gone (Curtis, Hefley, & Miller, 2002, p. 511). The graphic below (Figure 7) depicts how these different institutionalization practices fit in relation to the implementation practices (i.e., Activities Performed). [Note: "N" identifies the number of model practices associated with each practice type.]

Below is a brief description of each of the four categories of institutionalization practices.

- **Commitment to Perform** *enabling*-related practices ensures that the *necessary policy and sponsorship* is established to support performing the process area's implementation practices.
- **Ability to Perform** *enabling*-related practices ensures that the *requisite conditions* (e.g., resources, organizational structure, training, and so on) exist for performance of the process area's implementation practices.
- **Measurement and Analysis** *enduring*-related practices help *determine the status and effectiveness* of practices, as well as provide valuable data to help improve performance of the process area's implementation practices.
- **Verifying Implementation** *enduring*-related practices establish the *necessary executive review and audits* required to ensure compliance

FIGURE 7.
Five Types of Practices for each Process Area.

Enabling practices	**Commitment to Perform** ensures the process is established and will endure. • Establish organizational policies and leadership.	N = 48
	Ability to Perform establishes the necessary conditions for implementing the process completely. • Resources, organizational structure, and training.	105
	*(**Activities Performed** to directly implement a process area.)* • *Developing plans and procedures, performing work, tracking work, and taking corrective actions, as necessary.*	247
Enduring practices	**Measurement and Analysis** includes measurement practices necessary to collect and analyze data related to the process. • Provide insights into process status and effectiveness.	47
	Verifying Implementation of practices to ensure compliance with established process. • Appropriate executive reviews and audits.	51

Total Number of Practices: **498**

Adopted from: Hefnes, R. *CMMI Project Status:* SPAWAR Systems Center, page 9.
Enhanced from: Curtis, Heftley & Miller (2002). The People Capability Maturity Model: Guidelines for Improving the Workforce.

and continuation of performance for the process area's implementation practices.

As previously noted, utilization of these institutionalization practices is a hallmark of each of the CMU/SEI's developed CMMs and is an essential element leading to continuation of any People CMM improvement program's implemented practices (Curtis, Hefley, & Miller, 2002, p. 67). To highlight the importance placed upon these institutionalization practices, it is worth noting that the model contains more institutionalization-related practices (251) than implementation-related practices (247).

With the People CMM itself explained it is important to understand the theoretical approach for this model as well as what differentiates this model and its approach from other workforce improvement approaches. The following section identifies the People CMM's theoretical foundations as well as what differentiates this model's approach from other workforce improvement approaches.

People CMM Theoretical Foundations

Problem Defined

The major problem that People CMM endeavors to address is managers failing to recognize and accept *people management* as a top priority. A lack of such behavior is considered by the authors of the People CMM as typical within immature organizations. Within immature organizations managers "do not accept developing the skills of their unit as a critical personal management responsibility" (Curtis, Hefley, Miller, & Konrad, 1997, p. 2). As a result, the personnel reporting to such managers lack an understanding of the workgroup, unit, and organization's strategy. More importantly, these individual employees lack a vision for themselves and where they fit (i.e., their role) within the workgroup, unit, and organization.

The developers of the model purport that this lack of a proactive approach for managing and developing personnel leads career-oriented employees to identify and pursue their *own* agendas (Curtis, Hefley, & Miller, 2002, p. 19). This results in misalignment as well as a lack of synergies for the individual and the organization in addressing organizational goals. Specifically, when employees' agendas are constructed independent of the organization's input and objectives, employee agendas will, by default, (1) be self-oriented, and aligned with the employee's own interests and needs; and (2) deviate considerably from the organization's interests and needs (Curtis, Hefley, Miller, & Konrad, 1997, pp. 2-3).

Such differences between the employee's agenda and priorities [root cause], lead to misalignments that can ultimately result in employees being less motivated and indifferent to the organization's agenda and priorities. The result is inefficient use of talent, a decline in loyalty, lower productivity, and higher attrition [symptoms]; all of which ultimately manifest themselves as "talent shortages and a reduction in the overall capability of the workforce" (Das, 2003, p. 8).

Thus, a lack of basic people management (that would provide information, discussion, and negotiation regarding an employee's developmental requirements and career), leads employees to pursue agendas that are most likely neither optimal for the employee nor for the organization. This is considered to be a natural tendency within the immature workforce environment. This is because there are few identified incentives for employees to align their personal objectives and priorities with those of the organizations (Curtis, Hefley, Miller, & Konrad, 1997, pp. 2-3). As stated by the authors of the model:

> When an organization fails to proactively develop its workforce, career-oriented people pursue their own agendas. Mediocre performance and high turnover are typical when organizations provide few financial or career incentives for individuals to align themselves with the organization's business objectives. Loyalty declines when individuals do not perceive the organization to be a vehicle by which they will achieve their career aspirations. In these circumstances individuals perceive the organization as an opportunity for developing specific skills that, once developed, will be used to pursue career opportunities elsewhere. (Curtis, Hefley, & Miller, 2002, p. 19)

Problem Defined in HPT Terms

A review of such a workforce situation parallels Human Performance Technology (HPT)-related learning derived from some of B. F. Skinner's research. Researchers assumed they had *bad* rats (or pigeons) that were unable to learn and properly respond, when in reality the trainer, training methods, or environment were ultimately found to be at fault (O'Driscoll, 2003, p. 18). As Tom Gilbert (1978) explains, "The animal is always right; only the animal trainer can fail" (p. 79). In the immature workforce management situation detailed in the previous section, the organization and manager function in the role of the *trainer*. It is the employee who assumes the role of the *participant* who is simply responding most prudently to deficiencies found within the *management system*. As Gilbert (1978) concludes,

> For any given accomplishment, a deficiency in performance always has as its immediate cause a deficiency in a behavior repertory (P), or in the environment that supports the repertory (E), or in both. *But its ultimate cause will be found in a deficiency of the management system (M).* (emphasis added, p. 76)

Within this quote, Gilbert clearly asserts that deficiencies within the management system (i.e., organization or management) serve as the underlying catalyst for deficiencies in the participant's (i.e., worker's) behavior.

Solution Defined in HPT Terms

India-based HR consultant Mohanadoss (2001) advances that "the solution to these problems lies in improving the way organizations address

their people-related issues" (p. 4). It has been further advanced that it is this management of people that has become the information economy's essential source of competitive advantage (Das, 2003, p. 5; Mohanadoss, 2001, p. 10). Yet, this same management of people (by the organization) can similarly benefit individual employees, since it is often *their* best means for "achieving their career aspirations" (McGregor, 1960, pp. 49-50, 61; Curtis, Hefley, & Miller, 2002, p. 19).

Thus, managers in mature organizations are encouraged to work together with their employees, workgroups, and units to identify win-win situations that not only help the organization, but also energize the workforce. The process advocated is one that seeks to transform the *self-oriented employee,* who was driven to pursue his or her own interests, into a *self-aware individual,* who realizes the mutual benefits of being a team player within the workgroup, unit, and organization (Curtis, Hefley, & Miller, 2002, p. 19; Das, 2003, p. 8). The manager's role, as advocated, is to have employees realize that although benefits can be achieved by watching out for one's self (i.e., developing and pursuing one's own agenda and goals), even greater benefits can be derived by aligning one's self-agenda and goals with the workgroup, unit, and organization's agenda and goals (e.g., organizational strategies and requirements).

This approach aligns directly with concepts advanced by Douglas McGregor nearly five decades ago. McGregor (1960) exhorted—regarding the integration of individual and organizational goals—that managers must seek to create:

> Conditions such that members of the organization can achieve their own goals *best* by directing their efforts towards the success of the enterprise...the organization will be more effective in achieving its economic objectives if adjustments are made, in significant ways, to address the needs and goals of its members. (pp. 49-50)

Thus, a main goal proposed within HPT is for managers to work with their employees, helping each employee develop a career agenda that is beneficial to the employee while providing sufficient benefit to the organization. Specifically, both the individual and the organization benefit when an optimized employee career plan (i.e., an integrated plan) can be envisioned and pursued that aligns the employee's agenda with the company's agenda (McGregor, 1960, p. 61). Accomplishing this management goal can be beneficial to both parties, but can be especially liberating and energizing to employees. This approach to people management seeks to invigorate employees, creating behavioral change, and ultimately helping to change the culture of the organization.

People CMM Approach

In his book "The Human Side of Enterprise" (1960) Douglas McGregor advances a dichotomy of management philosophies. The first, Theory X, assumes that the average human being is inherently lazy. As a result, most

employees dislike work and will avoid it if they can. The second, Theory Y, assumes that the average human being is inherently ambitious and self-motivated. As a result, most employees like work and will contribute more to the organization if they are treated as responsible valued employees.
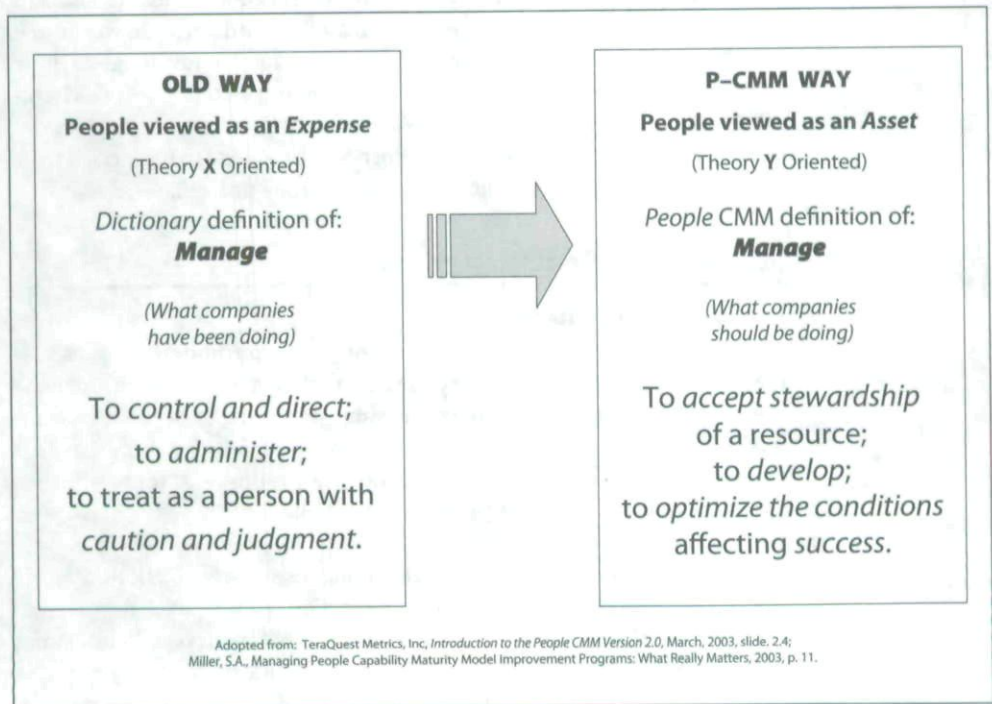
In reviewing the previous McGregor-related paragraphs, one can see why an employee not receiving appropriate management attention might function more in line with a Theory X employee, whereas an employee receiving the proposed management attention might function more in line with a Theory Y employee. Under McGregor's approach, and the approach espoused within the People CMM, the old Theory X-oriented paradigm of *management directing and controlling* is to be replaced by the more Theory Y-oriented approach of managers: (1) *accepting stewardship of a resource,* (2) *developing that resource, and* (3) *optimizing the conditions affecting the resource's success* (McGregor, 1966, p. 14; TeraQuest Metrics, 2003, p. 2.4).

The following figure (Figure 8) depicts this change in management orientation from how companies have traditionally been managing employees to how companies should be managing employees as advocated by the People CMM approach.

People CMM Goal

A major focus of People CMM is on managers working in conjunction with employees to mutually identify objectives that build employees' competencies (i.e., knowledge, skills, and process ability) in alignment with the company's current and envisioned business plans. It is proposed that, when

FIGURE 8.
People CMM Espoused Change in Management Approach.

OLD WAY

People viewed as an *Expense*

(Theory **X** Oriented)

Dictionary definition of:
Manage

*(What companies
have been doing)*

To *control and direct*;
to *administer*;
to treat as a person with
caution and judgment.

P–CMM WAY

People viewed as an *Asset*

(Theory **Y** Oriented)

People CMM definition of:
Manage

*(What companies
should be doing)*

To *accept stewardship*
of a resource;
to *develop*;
to *optimize the conditions*
affecting *success*.

Adopted from: TeraQuest Metrics, Inc, *Introduction to the People CMM Version 2.0*, March, 2003, slide. 2.4;
Miller, S.A., Managing People Capability Maturity Model Improvement Programs: What Really Matters, 2003, p. 11.

the employee's agenda and the organization's agenda are developed together, as espoused by the People CMM, the relationship is a reciprocating one. One that advances the competencies and capabilities of the people of the organization at the same time that it advances the competencies and capabilities of the organization itself—creating the win-win situation espoused by McGregor (McGregor, 1960, pp. 49-61; McGregor, 1966, p. 14).

The catalyst for this win-win situation is efficacious people management processes, which is what the People CMM seeks to accomplish. As Sujatha Das states (2003),

> It [People CMM] helps in creating an organizational climate that provides a work environment in which all employees have a chance to grow and mature as individuals in a team environment by satisfying their own needs while working for the success of the organization. Every person is able to perceive the best opportunity for realizing their needs by directing their efforts towards the achievement of both organizational and group needs. (p. 14)

In achieving this objective, a major goal for remaining competitive within today's workforce environment is realized, that being, an increase in the organization's "ability to attract, develop, motivate, organize, and retain outstanding employees" (Curtis, Hefley, & Miller, 2002, p. xi).

This alignment of individual and organizational goals—when properly accomplished—helps organizations win the battle within the crucial recruitment, development, and retention market for critical talent. The result sought is a more competent, professional, and versatile workforce, which has been identified as a "critical source of strategic advantage...within today's increasingly complex information-age organizations" (O'Driscoll, 2003, p. 21).

The following section identifies prospective benefits to be derived from the People CMM as well as how the model can be utilized.

People CMM Benefits and Use

People CMM Benefits Derived

Three of the main reasons for an organization undertaking assessments and for pursuing People CMM corrective actions are: (a) to assist organizations in making the necessary improvements to become an "Employer of Choice"; (b) to help organizations in blending cultures, policy, and procedures as a result of mergers or transitions; and (c) to enhance the organization's business performance (Miller, 2002, p. 13; TeraQuest Metrics, 2003, p. 19).

Preliminary People CMM data from reassessed organizations identify a significant increase in employee satisfaction as well as a decrease in employee turnover. Specifically, reported results for surveyed companies utilizing People CMM have reflected a three point increase in employee satisfaction on a scale of 1 to 10 and a reduction in employee turnover of 5%

to 10% below industry averages (Miller, 2002, p. 13; Curtis, Hefley, & Miller, 2002, p. 93). These results are alleged to be largely due to the fundamental change People CMM has on the organization's culture and its affect on how employees are managed, developed, and organized within the workplace.

Realizing that their work competencies change rapidly, one interviewed organization identified "workforce capability as a competitive issue and a source of strategic advantage" for their company (Confidential, 2003, July, p. 6). Thus, they were undertaking People CMM corrective actions to enable them to better address rapid change in workforce requirements (Wademan, 2004, June 23, p. 2). Another long-term user of the People CMM indicated on a survey that "higher employee satisfaction, more knowledgeable and empowered employees, more capable managers, very little employee turnover, and better organization of information" were some of the benefits they derived from implementing People CMM (Confidential, 2003, February 15, p. 2).

Sustained Improvement

A purported goal of all of the CMMs is not simply to improve practices, but to continuously improve practices. The premise that the architects of the People CMM function under is that "workforce practices are organizational processes that can be continuously improved through the same methods used to improve other business processes" (Curtis, Hefley, & Miller, 2003, p. 1). As a result, the People CMM's emphasis on continuous improvement aligns itself with TQM and Six Sigma theories, which are both utilized in the implementation and preservation of a People CMM program.

Similar to the TQM approach, implementation of People CMM improvements are undertaken in an incremental, step-by-step fashion. The model proposes an iterative strengthening of one maturity level at a time approach, specifically warning against "big-bang" implementations. It is alleged that broad, quick implementations more often fail to develop requisite supporting infrastructure. Such implementations often seek to skip process areas or skip one or more maturity levels altogether. The authors caution that such implementations can result in minimal lasting impacts and can ultimately affect corporate and workforce culture negatively (Curtis, Hefley, & Miller, 2002, pp. 11, 16). In fact, it is specifically these types of shortcomings the People CMM seeks to overcome via a very deliberate, detailed, and incremental approach to organizational change.

The model purposely borrows from the Six Sigma approach by breaking down workforce management related processes into their significant components and activities and then improving each through data driven, quantitative processes (e.g., utilizing process measurement, analysis, and continuous refinement). A premise advanced in reference to the CMM approach is that, "A practice cannot be improved if it cannot be repeated" (Curtis, Hefley, & Miller, 2002, p. 9). The People CMM also aligns well with Harrington's (1991) business process improvement-related statement that, "Measurements are key. If you cannot measure it, you cannot control it. If you cannot control it, you cannot manage it. If you cannot manage it, you cannot improve it" (p. 82). CMMs promote utilization of basic quality

management principles to foster achievement of lasting benefits required to survive and thrive within today's competitive global work environment (Curtis, Hefley, & Miller, 1995, p. 5). As stated by Schlichter (2001), "We learned from the Quality Movement that process performance improves when processes are standardized, measured, controlled, and continuously improved" (p. 7).

Model's Utility

The model is beneficial in two very significant ways. It may serve as a diagnostic tool in assessing the capability and maturity of an organization's workforce practices, as well as serve to guide a program of workforce process improvement.

A People CMM assessment can be accomplished at a number of different levels of detail. These include a simple gap analysis that compares current practices with the model's benchmark of practices, a Mini Assessment to identify areas to strengthen prior to undertaking a Formal Assessment, and the very detailed Formal Assessment that involves the use of a questionnaire, document reviews, and interviews. Each of these assessments allows an organization to determine the status of its workforce practices in comparison with People CMM's identified best practices. Such assessments can enable organizations to evaluate themselves over a period of time (e.g., how they are progressing) or in comparison with other organizations (e.g., against competitors) (Myers, 2004, p. 1).

People CMM assessments identify whether a practice has been "satisfied," "partially satisfied," or "not satisfied." Assessment findings define for the organization the areas of weakness they "need to improve" (Koch, 2004, p. 54). Assessment outputs help identify where "current" practices do not measure up to "desired" best practices; highlighting where capability is lacking, as well as identifying those practices requiring the most attention. From the gaps identified, corrective "fill in the gap" actions can be developed. It is proposed that identified corrective actions can serve to guide an organization's workforce improvement program; defining a structured route for the focus of attention and for making improvements.

It is worth noting that People CMM assessments measure the effectiveness of the organization's people management practices, *not* its people (Curtis, Hefley, & Miller, 2002, p. 93). That is, People CMM assessments focus upon evaluating managers and management practices rather than upon workers and work practices.

The People CMM framework can also be utilized to help organizations conceptualize where they want to be, and then serve as a tool to help them make the transition. As Paul Harmon (2003) states, "The key point of such reference models is to help you understand where you are today and to assist in developing a roadmap to help you get where you want to go" (p. 7).

In addition, simply understanding the model's practices, without undertaking an assessment, can serve as an enabler in helping the organization identify shortcomings (i.e., gaps), envision the future, and ultimately

in achieving and maintaining a more capable and readied workforce. The model can be especially valuable to organizations that have not developed the ability to systematically enhance the capabilities of their people or, worse yet, have simply not realized the necessity to do so.

Organizations have used the People CMM framework as a tool to help them "identify, communicate, and fully implement and utilize a clearly defined and integrated set of best practices workforce management processes" (Wademan, 2004, February 18, p. 3).

> Our People CMM assessment identified significant opportunities for improving our workforce management practices. We believe the model offers us a sound framework for finding areas that require process improvement as well as in helping us define best practice solutions. (Wademan, 2004, July 20, p. 2)

Maturity Level Assessment

In order to be assessed at a given People CMM maturity level a "Formal Assessment" must be undertaken with a CMU/SEI certified Lead Assessor heading-up the assessment. Lead Assessors are certified by the CMU/SEI. [A list of certified assessors can be located on the CMU/SEI website.]

Formal Assessments are rather detailed and encompass three major aspects: a questionnaire, document reviews, and interviews. The calendar timeframe for such an assessment (at a minimum) extends across a five month period from Preparation to the delivery of the Final Findings Report. This timeframe involves periods of intense effort during training, surveying, document reviews, interviewing, final report preparation and the delivery of the Final Findings Report to executive management, sponsors, process owners, and participants (Curtis, Hefley, & Miller, 2002, pp. 82-83). [A "process owner" can be defined as the person or department responsible for defining and maintaining a process and its associated practices. Process owners associated with the People CMM typically include Human Resources, Facilities, and Communications related personnel or departments.]

Within a Formal Assessment, all practices associated with a process area goal must be satisfied in order for the goal to be satisfied. Likewise, to satisfy a process area, all of the process area goals for that process area must be fully satisfied. Finally, to be assessed as achieving a specified maturity level, all process areas associated with that maturity level must be completely satisfied. In short, every practice that falls within a maturity level (as well as all maturity levels that fall below it) must be fully satisfied to receive assessment at that maturity level. [Note: On average, each maturity level encompasses approximately 125 practices.]

Implementing People CMM Improvements

The People CMM describes "what" an organization should do, but not "how" it should go about making changes. The organization determines how to address the improvement areas. (Intel Corporation, 2003, p. 2)

CMMs are descriptive, rather than prescriptive models. Thus, these models identify *what* practices might typically be implemented to fulfill a process area goal; not *how* practices must be implemented (Curtis, Hefley, & Miller, 2002, p. 50). It is up to the organization to determine the specifics of the improvements, based on the organization's size, culture, product line, and business objectives. Practices must be identified and implemented in a manner that best fits the organization (Curtis, Hefley, & Miller, 1995, p. 35; Curtis, Hefley, & Miller, 2002, p. 75). The practices of the model provide flexibility in achieving the purpose of the practice. The practices list "certain required preconditions and then leaves organizations a lot of leeway with the implementation" (Vohra, 2002, p. 3). Latitude is even provided within the model such that "acceptable alternatives" can be utilized as long as the alternative practice fully addresses the intent of the practice (Curtis, Hefley, & Miller, 2002, p. 50).

Further, the architects of the model do not promote implementation of unnecessary practices or burdensome overhead. Every practice implemented must serve a purpose and add value in achieving the goals of the process area. The model's developers are also proponents of identifying the most prudent approaches. A warning is even advanced against implementing layers of bureaucratic practices that slow down processes or onerous practices that will simply be ignored and ultimately have to be dismantled (Curtis, Hefley, & Miller, 2002, pp. 57, 69).

Appropriate warnings are also advanced regarding implementing the model. First, "that successful improvement programs must be run like any other project" utilizing plans, milestones, progress tracking, accountability, and so on (Curtis, Hefley, & Miller, 2002, p. 86). Second, that Executive Management and Human Resources support is imperative to success. In addition, warnings are advanced against: overly focusing on "achieving" a specified certification level; too hastily deciding to skip process areas or maturity levels; or implementing "too much, too soon."

Finally, the People CMM clearly identifies improvement—at every level, including level 5—as being an ongoing activity. Specifically, an organization never arrives at a place where it can cease pursuing improvements. Best practice organizations must continually improve their competencies and performance, thereby continuously elevating their workforce capability and pursuit of excellence (Curtis, Hefley, & Miller, 2002, p. 74). Once continuous improvement begins to wane, the level of competencies, capability, and the agility of the organization begins to diminish in relation to the organization's full potential; and in relation to its competitors. Succinctly stated, continual change and continuous improvement is espoused as a condition for competing, thriving, and ultimately for surviving within today's globally competitive, information-intensive organizations (Paulk, 1997, pp. 3-4).

Conclusion

This article provides a succinct introduction to the rather comprehensive and detailed People CMM, its approach, benefits, and use as a tool

for improving the capability of the workforce. The model seeks to address core HPT-related issues in a systematic and systemic manner by helping to identify opportunities and create interventions that lead to "increases in productivity and workers' satisfaction" (Stolovitch & Keeps, 1999, p. 12).

HPT professionals should become familiar with this model in order to understand the inter-working and benefits of the model, as well as to help implement this People CMM—or possible offshoots of it—in the future. It is important to recall that:

- The initial SW-CMM emerged within the software development and knowledge-intensive context.
- Success of this initial model has resulted in additional CMMs being developed.
- A People CMM version has been developed to help improve the capability and readiness of an organization's workforce.

This article also provided a brief introduction to the structure of the People CMM. Significant aspects include:

- The model consists of five levels of maturity (i.e., *Initial* through *Optimizing*).
- The model addresses four major theme areas (i.e., objective areas).
- There are twenty-two process areas addressed within the People CMM.
- Each process area is associated with a specific maturity level, as well as aligns under one of four theme areas.
- Each process area contains implementation goals and a single institutionalization goal.
- Each process area goal comprises a defined set of practices that must be addressed to satisfy that goal.
- Implementation practices are those *activities* to be performed to fulfill the specifics of the process area goal.
- Institutionalization practices *support* both the implementation and sustainability of a process area's implementation practices.
- To satisfy a process area goal, all supporting practices must be fully satisfied.
- To satisfy a single process area, all related process area goals must be fully satisfied.
- All process areas associated with a maturity level must be fully satisfied to be assessed at that maturity level.

HPT professionals should not only be aware of this model but should also be cognizant of what we can learn from the model's approach, thereby enhancing our field's current thinking and approaches to workforce capability. Two examples of such learning include: (1) the CMMs' use of a very deliberate and incremental (i.e., staged and process-oriented) approach to cultural change and increasing organizational capability and (2) the CMU/

SEI models' strong emphasis upon the utilization of institutionalization practices to support implementation practices for a process area.

In closing, it is worth noting that HPT professionals might wish to undertake additional formative and empirical research in relation to this People CMM. Additional formative research would help in expanding the knowledge base surrounding the model. Additional empirical research would help in identifying, speculating, and better understanding: (a) approaches for implementing workforce improvement programs that utilize People CMM, (b) advantages and disadvantages associated with the model and its methodology, and (c) results experienced from a diverse set of industries and practitioners implementing People CMM-based workforce improvement programs (Vohra, 2002, p. 4).

Author Notes

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As a result of the CMU/SEI being a federally funded research and development center of the United States Department of Defense, the text describing this model, as well as the model itself, is non-proprietary and available free-of-charge via the worldwide web at http://www.sei.cmu.edu/pub/documents/01.reports/pdf/01mm001.pdf (735 pages). The text is also available in hardcover format from its publisher.

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