People capability maturity model and human resource management systems: do they benefit each other?

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People Capability Maturity Model and Human Resource Management Systems: Do they benefit each other?

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Abstract. In this research, the degree of support of Human Resource Management System (HRMS) Suite of Oracle Applications ERP System for People Capability Maturity Model (P-CMM) is examined. The analysis is carried out through key practices of each key process area in P-CMM Levels. Each key process area (KPA) in second and third levels is mapped to the functionality provided by the HRMS. While the degree of support for Level 3 is not significantly different from the one provided for Level 2, the degree of support for each key process area in two levels shows considerable variation. The results of the analysis for the key process areas in second and third levels show that, despite some lack of functionalities in some of the key process areas, the HRMS provides utilities and functionalities that will facilitate and support the performance of most of the key process areas in second and third levels. However, the support for fundamental team processes is relatively limited and there is an opportunity for these systems to extend their functionalities towards these processes.

Keywords: People Capability Maturity Model (P-CMM), Maturity Framework, Team Process Improvement, Human Resources, Human Resource Management System (HRMS), Oracle HRMS

1. Introduction

During the last 10 years a number of large and medium sized organizations have implemented enterprise solutions [3,6]. Most of these companies have included Human Resource Management System (HRMS) as one of the implementation domains. At the same time increasing number of companies work on improving the management and development of their human assets including the efforts for increasing the performance of teams within their organizations [5,12]. Although these initiatives are strongly related, HRMS implementation and efforts for improvement in human resource development and management are usually not coupled. We perceive major advantages to bring these two efforts in harmony.

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Onur Demirörs has PhD and MSc degrees in Computer Science and BSc degree in Computer Engineering. He has been working in the domain of software engineering as a consultant, academician, researcher and entrepreneur for the last 15 years. His work focuses on software process improvement, software project management, software engineering education, software engineering standards, and organizational change management. He worked as a consultant for a number of software developing companies to improve their processes based on ISO 9001, ISO 15504 and CMM. He managed a number of research and development projects on software process improvement, business process modeling and large scale software intensive system specification/acquisition. He has over 40 papers published in various journals and conferences.

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This research examines the degree of support of Human Resource Management System (HRMS) Suite of Oracle Applications ERP System for People Capability Maturity Model (P-CMM) [1]. How and to what extent do HRMS applications support organizations to adapt models for improving the management and development of human resources was our primary research question. The objective of this study is limited to organizations whose team processes are at repeatable or defined levels with respect to P-CMM.

The results of this research provides a roadmap for organizations that plan to adapt P-CMM or similar team process improvement models as to find out the usability of ERP suits in general and the HRMS in detail to automate their processes. Those planning to utilize Oracle HRMS or similar human resource management suites can also benefit from the results to create road maps for implementation and to evaluate specific suites for their specific needs.

1.1. Scope and assumptions

In this study, each key process area (KPA) in second and third levels of P-CMM is mapped to the functionality provided by Oracle HRMS. Key process areas of fourth and fifth levels are left out of the scope of this study and are subjects to further studies.

In analyzing the degree of support for each key practice in KPAs, together with the level (rate) of support, where appropriate, the alternative(s) approaches are provided as responses. The level (rate) provided for the degree of support is derived from the alternatives proposed. For different alternatives, the level of support might be different. For many key practices, there might be other alternatives to be considered. Generally, these alternatives given in responses are not the unique ways to handle the key practices.

Every key practice in each KPA are analyzed and mapped to the functionalities provided by the Oracle HRMS system. Details of the responses for key practices are documented and presented in a technical report [8].

In general, ERP system implementations include merging the ERP system functionalities with business processes and vice versa. This is made possible by adaptation features provided by ERP systems. However, for some situations, the business processes cannot be handled with adaptations. In these cases, either the business processes are changed or the standard structure of the system is changed with customizations [2] by changing the source code or writing add-ons. Customizations, can be costly to perform and maintain, and requires additional technical expertise. In addition, there is a considerable risk of damaging the integrity of the system. Thus, most of the ERP systems, including Oracle Applications, are flexible enough to handle processes with customizations; however, there are risks and additional costs associated with performing them. In this study, we approached customization as the last option to be careful as an alternative for the support of any key practice or process area.

1.2. Article structure

First two sections present the fundamentals of People Capability Maturity Model and Oracle Human Resource Management System respectively.

Section 4 presents the findings of the analysis of the HRMS to understand the degree of support of P-CMM key practices and key process areas in second and third levels. This section also describes the rating scale used in the analysis. Finally Sections 5 and 6 present the conclusions and discussions about findings.

2. People Capability Maturity Model

People Capability Maturity Model is a maturity framework that focuses on continuously improving the management and development of the human assets of a software or information systems organization. P-CMM can be perceived as the application of the principles of Capability Maturity Model [7] to human assets of a software organization. It describes an evolutionary improvement path from ad hoc, inconsistently performed practices, to a mature, disciplined, and continuously improving development of the knowledge, skills, and motivation of the workforce. Although the focus in P-CMM is on software or information system organizations, the processes and practices are applicable for any organization that aims to improve the capability of its workforce. P-CMM will be guiding and effective particularly for organizations whose core processes are knowledge intensive.

People Capability Maturity Model, Version 1.0 [1] is the fundamental resource on P-CMM. It describes the structural components, consisting of key process areas within the five maturity levels of the P-CMM, and the principles that underlie each of the maturity levels.

As organizations establish and improve their people management practices, they progress through five levels of maturity. Each maturity level as depicted in Fig. 1 provides a layer in the foundation for the con-
tinuous improvement of an organization’s workforce practices. Maturity levels are composed of key process areas (KPA) that identify clusters of related workforce practices. When key practices (KP) of a KPA are performed collectively, they achieve a set of goals that are significant for enhancing workforce capability. Achieving each maturity level in the P-CMM institutionalizes new capabilities as a result of an organizational improvement program, resulting in an overall increase in the workforce capability of the organization.

2.1. Structure of the P-CMM

The relationships among the components of a maturity level are illustrated in Fig. 2. The components of the P-CMM’s structure include [1]:

- **Maturity levels**, which are well-defined evolutionary stages that establish a level of capacity for improving workforce capability.
- **Workforce capability** describes the level of knowledge and skills in the organization’s workforce and the ability of the workforce to apply them to improving business performance. Workforce capability is an important predictor of business performance.
- Except the initial level (Level 1), each maturity level is composed of key process areas (KPAs). Each KPA contains a set of goals that, when satisfied, establish that key process area’s ability to affect workforce capability.
- The goals of a key process area summarize the states that must exist for that key process area to have been implemented in an effective and lasting way. The extent to which the goals have been accomplished is an indicator of how much capability the organization has established at that maturity level.
- Each key process area is organized into five sections called Common Features. The common features specify the key practices that, when collectively addressed, accomplish the goals of the key process area. These five types of common features include:
  - Commitment to Perform
  - Ability to Perform
  - Activities Performed
  - Measurement and Analysis
  - Verifying Implementation
- Each key process area is composed from a set of key practices that, when implemented, help to satisfy the goals of that key process area. The key practices describe the elements of infrastructure and workforce practice that contribute most to the
effective implementation and institutionalization of their key process area.

3. Oracle Human Resource Management System

Oracle Applications is an integrated set of more than 50 software modules for human resources, financial management, supply chain management, manufacturing, project systems, and sales and service management that aims to integrate the entire enterprise. The subject of this study is the Release 11 (11.0.2) of Oracle Applications.

Oracle Human Resources Management System is the family name for an integrated group of applications that support the management of people [10]. It comprises modules that enable companies to manage their workforce through recruitment, staffing, training, compensation, and planning.

4. Support of Oracle HRMS through key practices

This section presents the analysis of Oracle HRMS to understand the degree of support of P-CMM key process areas in second and third levels.

Each key practice of key process areas is analyzed to understand and assess the degree of support of Oracle HRMS. Details of the study are presented in the technical report [8], where for each key practice, associated response states the underlying reasons for the rating level determined. Responses also include (if available) the features provided by the system for that practice and also the way these features can be utilized. In some of the practices, responses give the details of how these functionalities can be used to support the practice including workaround suggestions. A detailed study of the key practices and detailed responses for a sample KPA (staffing) is presented in Table 2 at the end of Section 6.

4.1. Rating scale utilized in assessing key practices and key process areas

The rating scale is a percentage scale from zero to one hundred percent that represents the extent of support of the attribute. The scale is an ordinal rating scale and has four levels:

\[ P \] Partially supported: 16% to 50% – There is evidence of a support to the practice or process, but achievable or required support is far more.

\[ L \] Largely achieved: 51% to 85% – There is a strong evidence of a support to the practice or process, but there still remain points that should have been considered and supported.

\[ F \] Fully achieved: 86% to 100% – There is evidence of a complete and systematic support to the practice or process.

In addition to these scale values, \( NA \) (Not Applicable) is also included in the legend in order to represent the situations where the support of a tool is not practical or where it is not convenient to talk about a support of such a system for that particular practice.

Together with above scheme, implementation related issues of the system are also considered while rating the degree of support. Instead of performing customizations, generally extra functionalities are tried to be satisfied with workarounds within the limits of adaptation.

In assessing the degree of support, method used to satisfy the performance of the practice is declared in parenthesis.

\( (W) \) – The support is provided with workaround.

\( (C) \) – The support is provided with customization.

No additional method declared with the rate letter implies that the support is provided with standard functionality (with adaptation). For example; a rate level of “L(C)” implies that the practice can be largely supported with customization while a rate “F” implies that the system can fully support the practice with its standard functionality (with adaptation).

4.2. Level 2: Repeatable

“The key process areas at the Repeatable level focus on establishing a foundation of basic workforce practices that can be continuously improved to develop the workforce and on eliminating problems that hinder work performance”.

In this level, basic workforce practices are established for staffing, performance management, training, and compensation. Basic discipline is in place in the organization’s workforce activities.

Key process areas:

- Work Environment
- Communication
- Staffing
The following sections of the report present the details of the support provided for each key process area of this level. The aggregated degree of support at level basis is not provided in this report. The degree of support is concluded at most at key process area level.

4.2.1. Works Environment

“The purpose of Work Environment is to establish and maintain physical working conditions that allow individuals to perform their tasks efficiently and to concentrate on their tasks without unnecessary or inappropriate distractions.”

HRMS does not provide specific utilities to track Work Environment related information. However, system enables similar objects to be defined and tracked in the system like organization units and/or locations. Thus, as a workaround, each work environment can be introduced into the system either as an organization unit or a location and related information can be tracked in additional fields activated in the system.

Degree of Support: L(W) (Largely supported with Workaround)

4.2.2. Communication

“The purpose of Communication is to establish a social environment that supports effective interaction and to ensure that the workforce has the skills to share information and coordinate their activities efficiently.”

HRMS provides utilities for competency definitions and assessments to capture the information related with the level of communication skills of the workforce, and have facilities to keep track of the information related with the activities performed to increase the level of communication skills of the individuals (in Training Administration Module). However, it does not provide specific utilities to facilitate communication between workforce.

Degree of Support: P(W) (Partially supported with Workaround)

4.2.3. Staffing

“The purpose of Staffing is to establish a formal process by which talent is recruited, selected, and transitioned into assignments in the organization.”

HRMS provides extensive utilities for staffing. It offers and supports a procedure to be followed during staffing process. This procedure is supported by the standard functionality with the following features: Vacant positions can be declared open; recruitment activities (advertisement, campaign, etc.) to announce the availability of positions can be entered and tracked; a list of qualified candidates can be developed; competency requirements of related positions can be defined; the most qualified candidate can be evaluated and selected; competence profile of each candidate can be entered; and outcomes can be communicated to candidates by system generated letters.

Degree of Support: F (Fully supported)

The details of the analysis for each key practice as the justification of above degree are presented as a sample in Table 2 at the end of Section 6.

4.2.4. Performance Management

“The purpose of Performance Management is to establish objective criteria against which unit and individual performance can be measured, to provide performance feedback, and to enhance performance continuously.”

HRMS offers specific utilities for supporting performance management activities. It provides utilities to develop performance criteria; to define competencies and associated rating scales; to define competency requirements of each positions and jobs; to assess the performance of the individuals; and to grant access to and ensuring confidentiality of performance data. However, Oracle HRMS does not provide direct support for performance management activities of an organizational unit. In addition, measuring the performance of this process and verifying that it is conducted with regard to organization policies requires special reports to be prepared.

Degree of Support: L (Largely supported)

4.2.5. Training

“The purpose of Training is to ensure that all individuals have the skills required to perform their assignments.”

Training involves identifying the skills required to perform critical tasks, identifying training needs within each unit, and ensuring that needed training is received. Each unit identifies the skills required to perform critical tasks involved in the assignments given to individuals. Training needs are identified for each unit, and a plan is developed to ensure that needed training is received. The HRMS suite has a separate module for training activities. Training Administrator module provides these functionalities to support the training activities of an organization mentioned above.

Degree of Support: F (Fully supported)
4.2.6. Compensation

“The purpose of Compensation is to provide all individuals with remuneration and benefits based on their contribution and value to the organization”.

With HRMS, a working model of organization’s own types of compensation and benefits, and the policies, or business rules that govern the allocation of these to employees can be defined. The system provides a basis for determining and adjusting compensation, which includes skill qualifications and performance. The first step in the process is to define the separate types of compensation and benefit that are required to be tracked. In Oracle HRMS, these are defined as elements [10]. Criteria for determining and adjusting compensation according to qualifying conditions and to a unit, position, job, etc. can be set. The system also provides a schema for defining the frequency with which compensation activities are performed.

HRMS has standard reports and reporting tools (“Discoverer” for end users and “Reports” for developers) that enables the aggregation of individual compensation related information and element related trends at the organization level or any level (compensation element type level, etc.) within each unit. These may include;

- total and projected compensation,
- growth in compensation,
- effects of criteria on compensation,
- compensation by position, job, etc. types,

However, it does not provide utilities to measure the timeliness and efficiency of compensation activities and may need highly customized and complex reports to assess compensation versus individual, unit, and/or organizational performance.

Degree of Support: L (Largely supported)

4.3. Level 3: Defined

The key process areas at the Defined level address organizational issues. The organization identifies its core competencies and plans, and tailors and executes its defined workforce practices to enhance its capabilities in the core competencies required by its business environment. The organization tailors its workforce activities for developing and rewarding these core competencies. Career development activities are undertaken and a participatory culture is nurtured.

Key process areas are:

- Knowledge and Skills Analysis
- Workforce Planning
- Competency Development
- Career Development
- Competency-Based Practices
- Participatory Culture.

4.3.1. Knowledge and Skills Analysis

“The purpose of Knowledge and Skills Analysis is to identify the knowledge and skills required to perform core business processes so that they may be developed and used as a basis for workforce practices”.

HRMS support this process by providing competence definition with regard to business goals, then assigning competence requirements for an organization unit, a job or a position. However, Oracle does not provide any means to track the data that can be used to determine the quality of knowledge and skills profiles. This can be accomplished by providing additional segments (descriptive flexfields) to keep information about quality of knowledge and skills profiles, which are hold as competency requirements in “Competency Requirements” window.

Degree of Support: L (Largely supported)

4.3.2. Workforce Planning

“The purpose of Workforce Planning is to coordinate workforce activities with current and future business needs at both the organizational and unit levels. Workforce Planning involves developing a strategic workforce plan that sets organization-wide objectives for competency development and workforce activities, and developing near-term plans to guide the workforce activities of each unit”.

In HRMS, non-monetary workforce budgets, such as headcount or full-time equivalents, which are based on organization’s work structures, can be defined. Workforce budgets can be defined against an organization unit, job, position, or any combination of these. Workforce budgeting functionality (feature) provides a comparison between the budgeted (planned) and actual workforce values. In that sense, workforce budgets are useful features for workforce planning. Also, competency definition and competency requirement assignment for business processes can enable the analysis of workforce needs of the organization with respect to the processes needed in the vision of the organization.

Degree of Support: F (Fully supported)
4.3.3. Competency Development

“The purpose of Competency Development is to constantly enhance the capability of the workforce to perform their assigned tasks and responsibilities”.

HRMS provides features to support competency development and training activities. Oracle HRMS Training Administration module has utilities for establishing training and development programs. It also provides utilities to report the current status of these programs at organization and individual levels (see 4.2.5 – Training KPA). It can provide the anticipated number of people with the needed competency by specified dates. Although it does not enable to keep information about how the number of people with the competency will be developed and/or provided, but it supports the activities of any recruitment (see 4.2.3 – Staffing KPA) or training for competency development (see 4.2.5 – Training KPA).

Degree of Support: L (Largely supported)

4.3.4. Career Development

“The purpose of Career Development is to ensure that all individuals are motivated and are provided opportunities to develop new skills that enhance their ability to achieve career objectives”.

HRMS has features to track and provide related information in the personal development plan. It provides utilities to track career objectives and career paths of individuals to achieve those objectives. It also enables knowledge and skills identification and track in performance management activities to enhance performance in the current assignment. System can track skills needed to progress toward the career objectives, potential next assignments, and plan for developing the skills required for potential next assignments.

Degree of Support: F (Fully Supported)

4.3.5. Competency-Based Practices

“The purpose of Competency-Based Practices is to ensure that all workforce practices are based in part on developing the knowledge and skills of the workforce”.

Competency-Based Practices involves recruiting against knowledge and skill needs, basing selection methods on assessing the knowledge and skills of candidates, assessing job performance against the tasks and roles assigned to the position, and basing compensation at least in part on growth in knowledge and skills.

HRMS enables competency type definitions and competency requirements for jobs or positions in the system. These definitions can be utilized during recruitments (applicants are evaluated according to these competencies and competency requirements of the position they are applying), during assessments (as the performance of the individuals are assessed with regard to the competencies defined).

Once the organization’s requirements for core competencies are defined, recruitment activities can be based on these requirements. Applicants can be evaluated with respect to these requirements set for the responsibilities they apply. Also web based tool “Suitability Search” can be used to search for and match the most suitable person to a job or position. Search can be performed by personal characteristics, assignment characteristics and competencies or combination of both. Potential individuals with a proficiency level in a specific competence, at a required level and above (or below) can be searched.

On the other hand, in HRMS, performance criteria are at individual level. Individual performance can be aggregated at unit or organization level. Oracle HRMS provides ways to define performance criteria that include objectives for developing the core competencies. However, it does not provide similar structure for defining performance criteria at unit levels. Nonetheless, these values can be defined in additional segments (custom attributes) of Organization object in the system.

For some of the key practices of this key process, (Activity 7, 8, 9 and 10) the performance of the practice solidly depends on how the organization understands the accompanying objectives, how effectively devote resources on the process. Thus, HRMS provides utilities that an enable organization to effectively perform the process, however, it does not provide any utility to ensure that this is realized.

Degree of Support: L (Largely supported)

4.3.6. Participatory Culture

“The purpose of a Participatory Culture is to ensure a flow of information within the organization, to incorporate the knowledge of individuals into decision-making processes, and to gain their support for commitments. Establishing a participatory culture lays the foundation for building high-performance teams”.

Participatory Culture involves establishing effective communications among all levels of the organization, seeking input from individuals, involving individuals in making decisions and commitments, and communicating decisions to them.
Table 1

<table>
<thead>
<tr>
<th>Level 2 Repeatable</th>
<th>Level 3 Defined</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Degree of support of Oracle HRMS for each KPA</td>
</tr>
<tr>
<td></td>
<td>Degree of support</td>
</tr>
<tr>
<td>Level 2 Repeatable</td>
<td>Work Environment</td>
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<tr>
<td></td>
<td>Communication</td>
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<td></td>
<td>Staffing</td>
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<td>Performance Management</td>
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<td>Training</td>
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<td></td>
<td>Compensation</td>
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<td>Knowledge and Skills Analysis</td>
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<td></td>
<td>Competency-Based Practices</td>
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<tr>
<td></td>
<td>Participatory Culture</td>
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</tbody>
</table>

For many cases, HRMS does not have specific functionalities to establish a flow of information within the organization to incorporate the knowledge of individuals into decision-making processes, and to gain their support for commitments. However, the architectural characteristics of the system enable any information to be shared through organization easily. In essence, for most of the activities to be performed for establishing a participatory culture, a tool can barely be utilized to help or enhance the performance of that activity. The performance is very much related with how effective the communication is established, how management supports and tries to incorporate the individuals in decision making process. HRMS, in that sense, can support organizations to establish the system to make available adequate information to any level of the organization for decision making.

Degree of Support: P (Partially supported)

5. Conclusion

Many of the companies have implemented or implementing HRMS applications of ERP systems. On the other hand, increasingly companies are trying to adapt frameworks and approaches to improve the quality of the processes, products and enhance their workforce capabilities. To bring these two efforts especially in software organization in harmony we examined the degree of support of a Human Resource Management System (HRMS) for People Capability Maturity Model (P-CMM).

The support was analyzed through key practices of each key process area (KPA). KPAs in second and third levels are mapped to the functionality provided by the HRMS. Table 1 summarizes results by presenting degree of support ratings for each KPA of Levels 2 and 3.

The degree of support of HRMS for each key process area shows considerable variation. In Level 2, while the degree of support for communication KPA is relatively limited, the support for work environment KPA could mostly be provided with workarounds. The system provides all essential utilities, particularly for staffing and training key process areas.

The degree of support for Level 3 is not significantly different from the one for Level 2. Mostly due to its people oriented success factors, participatory culture key process area can only be partially supported by the system. On the other hand, work planning and career development key process areas are fully supported. The remaining KPAs, knowledge and skills analysis, competency development and competency based practices were largely supported by the system.

6. Discussion

Communication and Participatory Culture key process areas include fundamental functions towards team process improvement. While there is an extensive support of these similar ERP systems for basic HRM processes in classical sense, the support for team processes are not adequate. Having limited support to fundamental team processes, these systems have great opportunity to extend their functionalities towards these processes.
<table>
<thead>
<tr>
<th>Practice</th>
<th>Grade</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commitment to perform</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment 1. The organization follows a documented policy for conducting its staffing activities.</td>
<td>L</td>
<td>Response 1: HRMS can help to setup a workflow by arranging the sequences of forms to be reached consequently with regard to documented procedure. It offers and supports a procedure to be followed during staffing process. The procedure offered and supported by the standard functionality includes the following steps:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Vacant positions declared open (“Requisition and Vacancy” window);</td>
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<td></td>
<td></td>
<td>– Availability of the position announced by recruitment activity (advertisement, campaign, etc.) (“Recruitment Activity” window);</td>
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<tr>
<td></td>
<td></td>
<td>– A list of qualified candidates developed (“Applicant Quick Entry” window);</td>
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<tr>
<td></td>
<td></td>
<td>– The most qualified candidate evaluated and selected (“Suitability Search”, web based interface. Also competence profile of each candidate entered in “Competence Profile” window);</td>
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<tr>
<td></td>
<td></td>
<td>– Outcomes communicated to candidates (Letters);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Selected candidates transitioned into their new position (Personnel type updated in “Enter and Maintain” window);</td>
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<td></td>
<td></td>
<td>– Orienting selected candidates to the organization (Training needs identified after competency analysis and information about training courses to be taken entered in Training Administration Module);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Also, Oracle HRMS can keep documented policy for staffing process by “Attachments” feature (if staffing process is entered into the system as a position or job object).</td>
</tr>
<tr>
<td>Commitment 2. An organizational role(s) is assigned responsibility for assisting and advising units on staffing activities and procedures.</td>
<td>L</td>
<td>Response 2: HRMS can provide responsibility assignment for a role in the organization and keep additional information about the details of the responsibilities and associated skills. An individual(s) in an organizational unit can be assigned responsibilities by first declaring related responsibilities either as a “job” or “position” then assigning this responsibility to the individual(s).</td>
</tr>
<tr>
<td><strong>Ability to perform</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability 1. Within each unit, an individual(s) is assigned responsibility for ensuring that staffing activities are performed.</td>
<td>L</td>
<td>See Response 2.</td>
</tr>
<tr>
<td>Ability 2. Adequate resources and funding are provided for the planned staffing activities.</td>
<td>L(W)</td>
<td>Response 3: HRMS does not provide specific standard utilities to keep track of the resources required and utilized for the execution of an activity. However, as a workaround, staffing object can be introduced into the system as a “job” or a “position” object that can be assigned to one or more individuals as responsibility as it is offered in responsibility and assignment related activities. This definition can be performed in “Job -&gt; Define” or “Position -&gt; Define” forms in HRMS. After defining this object, now it is not only an entity to be assigned to individuals but also an object whose required and used resources can be kept track of. This and similar information can be kept in “Extra Information Types (EIT)” structures. By this way, one can have information about the required and utilized resources for that process and have information about whether adequate resources are dedicated and utilized for that process.</td>
</tr>
<tr>
<td>Ability 3. Individuals responsible for staffing activities are trained in methods and procedures relevant to their responsibilities.</td>
<td>F</td>
<td>Response 4: Oracle HRMS Training Administration Module can keep track of training activities with its associated material, resources and individuals to be participated as trainers and trainees. Competency levels for any process or position can be defined and trainees can increase their levels of competency as they proceed through training activities and make themselves eligible for jobs, which have certain competency requirements. Information within these activities can be controlled in the system.</td>
</tr>
<tr>
<td>Ability 4. Individuals participating in staffing activities receive orientation in the laws, regulations, methods, and organizational policies relating to the staffing process.</td>
<td>F</td>
<td>See Response 4.</td>
</tr>
<tr>
<td>Practice</td>
<td>Grade</td>
<td>Response</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
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<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activity 1. Responsible individuals plan and coordinate the staffing activities of their units in accordance with documented policies and procedures.</td>
<td>P/W</td>
<td>Response 5: HRMS only supports this activity by keeping documented policy for staffing by “Attachments” feature and can provide ways for each employee to reach policies.</td>
</tr>
<tr>
<td>Activity 2. Position openings within a unit are identified and analyzed.</td>
<td>F</td>
<td>Response 6: HRMS provides extensive utilities that facilitate staffing. It can provide ways to budget positions, analyze open positions, and analyze the requirements and responsibilities of these positions. Budgets can be defined to reveal the headcount requirements within enterprise, and then requisitions can be raised for the vacancies required. These are handled in “Positions -&gt; Budgets” form. In this form detailed analysis of current workforce, past budgets and realization of the budgets can be analyzed. Positions are opened and tracked in “Recruitment -&gt; Requisition and Vacancy” form. For each open position, competency requirements can be entered to match with the skills of the applicants during selection process.</td>
</tr>
<tr>
<td>Activity 3. Position openings within the organization are widely communicated.</td>
<td>F</td>
<td>Response 7: HRMS does not provide specific communication utility within the workforce but can facilitate this activity by proving the “rights” for everyone to see the vacancies (open positions) in “Recruit -&gt; View Vacancies” form. Also reports are also available for all employees (who have rights) to see open positions with their requirements.</td>
</tr>
<tr>
<td>Activity 4. External recruiting activities are planned and coordinated with unit requirements.</td>
<td>F</td>
<td>Response 8: In HRMS open positions are defined (“Recruitment -&gt; Requisition and Vacancy” form). Also, budgets can be defined to reveal the headcount requirements within enterprise, and then requisitions can be raised for the vacancies required. These are handled in “Positions -&gt; Budgets” form. A set of open positions can be communicated to external sources through relevant media. Information about these communication activities (such as advertisements) is entered into the system with “Recruitment -&gt; Recruitment Activity” form. All relevant information about these activities can be kept in the system in standard segments and descriptive flexfields of related form.</td>
</tr>
<tr>
<td>Activity 5. A selection process and appropriate selection criteria are defined for each open position.</td>
<td>F</td>
<td>Response 9: For each open position, competency requirements can be entered to match with the skills of the applicants during selection process. For suitability matching, competence requirements for jobs and positions in the Competence Requirements window can be entered. Oracle HRMS provides a web-based tool “Suitability Search” to search for and match the most suitable person to a job or position. This might be performed during recruitment, succession planning, and so on. You can search by, personal characteristics, assignment characteristics and competencies or a combination of both. In the search, you can identify which competencies are required and which are optional. You can also search for people with a proficiency level in a specific competence, at a required level and above (or below). Suitability Search then produces a list of all people who possess the required and optional competencies, at the level defined. Besides, Line Manager Direct Access (LMDA) enables line managers to perform searches to identify people by skills, personal characteristics, and applicant or employee information. The “person list” generated from the search is used for processes such as graphical comparisons, group ranking, appraisals and assessments. Managers can save the list and use it many times; enabling them to easily access the people they deal with frequently.</td>
</tr>
<tr>
<td>Activity 6. Each unit, in conjunction with their human resources group, conducts a selection process for each position it intends to fill.</td>
<td>F</td>
<td>Response 10: All candidates who applied to an open position are entered to the system in “Applicant Entry” form. HRMS provide utilities to record addresses, personal details, application information, competencies, qualifications, school and college attendances, and work choices for all applicants. Applicants are interviewed and all interview related information is entered in “Applicant Interview” form. An applicant can go through number of interviews. All information about the interviewers can also be entered into the system.</td>
</tr>
</tbody>
</table>
Table 2 (Continued)

<table>
<thead>
<tr>
<th>Practice</th>
<th>Grade</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 7. The position is offered to the most qualified candidate.</td>
<td>F</td>
<td>Response 11: After interviewing with the applicants, the position is offered to the applicant and applicant assignment status is made approved. All rejected applicants’ status can be mass updated and changed to Terminate Application. Reasons for rejection can also be entered. All relevant letters are prepared by the system to be sent to all applicants.</td>
</tr>
<tr>
<td>Activity 8. The organization coordinates to attract the selected candidate.</td>
<td>F</td>
<td>Response 12: For this activity, HRMS only offers interviewing utility. Applicants are interviewed and all interview related information is entered in “Applicant Interview” form. An applicant can go through number of interviews. All information about the interviewers can also be entered into the system.</td>
</tr>
<tr>
<td>Activity 9. The selected candidate is transitioned into the new position.</td>
<td>F</td>
<td>Response 13: After applicant is entered to the system and status is changed from “applicant” to “employee”, the requirements of the position applied together with its responsibilities are automatically assigned to the new employee.</td>
</tr>
<tr>
<td>Activity 10. All appropriate members of a unit are actively involved in its staffing process.</td>
<td>F</td>
<td>Response 14: HRMS only supports this activity by providing ways to enter interview related information particularly the workforce that participated directly in related staffing activity.</td>
</tr>
<tr>
<td>Activity 11. Workforce reduction and other outplacement activities are conducted in accordance with the organization’s policies and procedures.</td>
<td>F</td>
<td>Response 15: HRMS only supports this activity by providing position budgeting utility that keeps track of the intended (planned) workforce within selected time interval. Deviations from budgets are also tracked by this feature.</td>
</tr>
<tr>
<td>Measurement and analysis Measurement 1. Measurements are made and used to determine the status and performance of staffing activities.</td>
<td>L</td>
<td>Response 16: HRMS only supports this activity by providing the “View Vacancies” window to see lists of vacancies for an organization, location, job, position, grade, group, recruiter, or recruitment activity. All vacancies of a particular status can also be searched.</td>
</tr>
<tr>
<td>Measurement 2. Unit measures of staffing status are collected and aggregated at the organizational level.</td>
<td>F</td>
<td>Response 17: HRMS provides extensive and flexible reporting utilities for reporting the current and past statistical data about staffing activities.</td>
</tr>
<tr>
<td>Verifying implementation Verification 1. A responsible individual(s) verifies that staffing activities are conducted according to the unit’s plan and the organization’s documented policies.</td>
<td>F</td>
<td>Response 18: HRMS can only support these activities by keeping documented policy for each object by “Attachments” feature and also by providing status viewing of the staffing activities with “View Vacancies” window. Also reports can be designed to aggregate and document the information related to the current status of the activities.</td>
</tr>
<tr>
<td>Verification 2. Executive management periodically reviews the status of the organization’s staffing activities to determine if they comply with its documented policies.</td>
<td>L</td>
<td>See Response 18.</td>
</tr>
</tbody>
</table>

From common features viewpoint, HRMS is particularly useful for “activities performed” common feature. For commitment to perform, HRMS supports policy statements either by attachments feature as a workaround or its standard workflow structure. Similarly, leadership role assignment to processes generally supported with workarounds only if that key process is defined as an entity in the system. If these processes are introduced into the system, then it is also possible to keep track of resources and funding needed for the performance. Training is supported with a separate module not only for the processes area but also for ability to perform common feature for all processes. Procedure to be followed for the execution of the process is either embedded in the system as proposed procedure or can be designed through workflow module. On the other hand, for most of the key process areas, HRMS does not provide specific utilities to measure the performance of the processes and verify that they are performed, but provide reporting tools to mine useful information as indicators of measures and means for verifications.

Considering findings for levels 2 and 3, despite some lack of functionalities in some of the key process areas (particularly for fundamental team processes) and in common features in general, HRMS is a useful tool
that provides a variety of features to support organizations that are adapting similar maturity frameworks or approaches.

6.1. Using team process improvement models to implement HRM suites

In this study we focused on the usability of HRMS in the context of P-CMM. During our studies we have also observed a number of benefits in the reverse direction.

First of all team process improvement models can be excellent enablers for HRMS automation. Before the implementation of an HRMS system, a well-defined process model developed as part of a team process improvement effort enables automating right processes. Once the (whole or partial) implementation is complete, the defined processes can enable to verify that the software automates the processes right.

An even more critical benefit is related with change-ability of HR requirements. The requirements of human resources are not fixed, that is, one time implementation of a specific suite for a specific process set is only a beginning. As the needs of human resources change, the implementation is expected to conform to the changing requirements. The efforts for conformity might be substantial. Depending on the suite and magnitude of change it might be required to reengineer the whole system or sub-system. Team process improvement models on the other hand, prescribe generic road maps for changes in human resources. Based on these road maps the usability and sustainability of specific ERP suites for specific organizations can be predicted in advance.

Finally, as studies to harmonize automation and improvement efforts mature, ERP Solution providers will also benefit from the results. Particularly, the first effort might be on providing enhanced functionalities to support team processes. The team process improvement models and the coupling efforts will provide necessary feedback to improve their suits.

References