Competency Based Management

A Framework for a Generic Competency Model for Educational Institutes

Dr Mohammed Tikrity

Alpha Training UK Limited

Competency-Based Education
A Framework for a Generic Competency Model

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Abstract

This paper provides a broad overview of the concept of competency, its definition, dimensions, modelling and their importance in education. It addresses some challenges associated with the development of competency-based management systems. The paper elaborates on the main components of competency models and explains the main aspects to be taken into account for designing and developing a generic competency model. The paper proposes a conceptual framework of a generic competency model. Some examples of country practices are also presented in accordance to the conceptual framework presented in the paper.

Introduction

Since the 1990s, competency development has become the pressing issue throughout industries. It has become the code words for the human resources and strategic management practices of recruiting, selecting, placing, leading, and training employees and evaluating employee performance. There are two main reasons for this:

1. Competency models are helping organisations take a more unified and coordinated approach in designing improvements to human resource management systems, including job redesign, recruitment, organisational learning, career management, performance improvements and compensation systems.

2. Competencies provide a basis for needs assessments to help organisations identify areas for development and improvement programs. This approach usually includes an extensive review of the management literature, field surveys, focus groups, and reviews by experts in the field.

Competencies are a critical lever for at least five reasons[1]:

1. They guide direction;
2. They are measurable;
3. Competencies can be learned;
4. They can distinguish and differentiate the organisation;
5. They can help integrate management practices

The U.S. Department of Labour, Employment and Training Administration (ETA) has developed the Competency Model Clearinghouse (CMC). The goal of the clearinghouse is to inform the public workforce investment system about the value, development, and uses of competency models. To support the development of industry competency models, ETA worked with industrial / organisational psychology experts to develop a generic model of competencies essential to work performance. The model, referred to as the Building Blocks for Competency Model provides a structure or framework for developing the personal effectiveness, academic, and workplace competencies required by an industry or an occupation.

There is increasing emphasis on improving quality and demonstrating accountability in the field of education. All the evidence from different education systems around the world shows that the most important factor in determining how well children do is the quality of teachers and teaching.[2] Competency models enable educators and training providers to[3]:

- Work with business and industry to identify skill requirements to ensure that the curriculum and/or technical training programs are responsive to these requirements
- Design and develop course and program curriculum based on skills required by business and industry

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- Determine which competencies are in highest demand and help students plan their courses accordingly
- Promote articulation between secondary and postsecondary education offerings

Research found that the main driver in variation in student learning at school is the quality of teachers and that the quality of the school system cannot exceed the quality of the people who teach in it , which means there must be a thorough and on-going commitment to teachers; development throughout their careers.[4] The Schools White Paper 2010, UK Department for Education states that "the first, and most important lesson, is that no education system can be better than the quality of its teachers. The most successful countries, from the Far East to Scandinavia, are those where teaching has the highest status as a profession; South Korea recruits from their top 5 per cent of graduates and Finland from the top 10 per cent." [5] James Morrison, Professor Emeritus of Educational Leadership at UNC-Chapel Hill, notes that, "The crux of the issue is defining and measuring competency."[6] However, Steiner and Hassel (2011) pointed out that competency-based performance management remains relatively rare in education.[7] One reason for this is that competencies are more difficult to detect than qualifications, skills, and knowledge, but they largely influence these observable behaviors.[8] Schoonover and Anderson (2000) anticipate the use of competencies as a strategic intervention to continue, and even to accelerate.[9]

In 2001, Singapore's Ministry of Education (MOE) overhauled its existing teacher evaluation system and replaced it with a more comprehensive approach, which it called the Enhanced Performance Management System. The new system represented a major shift from focusing teacher evaluation on observable characteristics, such as subject matter expertise, classroom management, and instructional skills, to emphasizing the underlying characteristics, or "competencies," that lead to exceptional performance.[10] Today, Singapore's students consistently perform at the top of internationally comparable exams, and 98 per cent of Singapore's sixth-grade students achieve math standards more rigorous than the eighth-grade standards on the U.S. NAEP exam (National Assessment of Educational Progress). Many of Singapore's lower-achieving students are learning at levels higher than gifted-student curricula in U.S. schools. However, the research method Singapore used to develop its competency model was designed in the United States in the 1970s by Harvard University researcher David McClelland.[11] In the Middle East competency development and mapping still remains an unexplored process in most organisations despite the growing level of awareness.

Competency Defined

Competency means different things to different people based upon their perception and context of application. There is a wide range of definitions, even among a fairly homogeneous expert population, underscoring the difficulty of pinpointing a standard definition of the term. The US Office of Personnel Management (OPM) defines a competency as "A measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully."[12] First discussed and assessed by McClelland in the early 1970s, competencies, or individual characteristics, were recognised as significant predictors of employee performance and success, equally as important as an individual's academic aptitude and knowledge content as indicated by tests scores or results (Lucia & Lepsinger, 1999; McClelland, 1973).[13] Boyatzis (1982) defines a competency as: "a capacity that exists in a person that leads to behaviour that meets the job demands within parameters of organizational environment, and that, in turn brings about desired results".[15]

Is it Competency and Competence?

Competency: A person- related concept that refers to the dimensions of behaviour lying behind competent performer.

Competence: A work- related concept that refers to areas of work at which the person is competent

Competencies: Often referred as the combination of the above two.

A Competency is something that describes how a job might be done, excellently; a Competence only describes what has to be done, not how. In the field of Human Resources, competencies often deal with the characteristics of a person. An individual's competency is defined as a written description of

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measurable work habits and personal skills used to achieve a work objective. The following are a few points to be considered:

– An individual competency is different from the organisational competencies, capabilities, values and priorities

– A written description communicates exactly what the term competency means

– Measurable work habits and personal skills implies that competencies are a fair measure of an individual's actions

– Individual competencies contribute to achieving a common work objective.

Competencies are operationally defined by performance indicators. These performance indicators identify skills, behaviours, or practices that demonstrate the existence of the competency. Therefore, the best way to express competencies is by the use of behavioural language. It allows a clear and understandable description of the actions needed to be performed in order to achieve the organisational goals. Individual competencies can also help diffuse conflicts and disagreements because they help put forward the situation in a very lucid format and give a different perspective to the entire matter. Behavioural language allows easy communication of standards, expectations, goals and objectives, thus making it the ideal way to build robust competencies.

Dimensions of Competencies

Competencies are classified and modelled in different ways. General Competency Models require the following dimensions to be specified:

- Types of competencies
- Proficiency levels
- Performance levels
- Importance
- Behavioural indicators

Types of Competencies

There are at least three types of competencies: Core, Common, and Position (Technical).

Core competencies are the skills, attributes and behaviours which are considered important for all staff of the Organisation, regardless of their function or level. Core competencies identify behaviours and skills all employees are expected to demonstrate to carry out the mission and goals of the organisation. They are required by all positions in an organisation in order to be able to successfully perform duties required to meet the organisation's mission, vision, values and strategic plan. Typically, competency identification is first done at this level. Examples: Cooperation, Teamwork, Commitment to Safety and Quality of Work.

Common competency: is required by a specific organisational unit or type of position in addition to core competencies in order to successfully perform the duties required. Typically, this step comes next, as the organisation moves deeper into competency identification and focuses on particular groups of jobs. Common competencies may be the same as certain core competencies but required at a higher level of proficiency in order to perform specific job duties.[17] Common competencies may also include technical competencies, which refer to specific occupational skills gained from education or training or which are based on a particular area of expertise. Examples: Customer Service, Quality Control and Innovation.

Position (Technical) competency: specific to a particular position or a core or common competency for a particular position that is required at a higher level of proficiency. Position competencies may also include technical competencies, which refer to specific occupational skills gained from education or training or which are based on a particular area of expertise. Managerial Competencies are considered essential for staff with managerial or supervisory responsibility in any service or programme area, including directors and senior posts. Some managerial competencies could be more relevant for specific occupations; however they are applied horizontally across the organization, i.e. analysis and decision-making, team leadership, change management, etc. communication, programme execution, processing

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tools, linguistic, etc. Technical/Functional are considered essential to perform any job in the organisation within a defined technical or functional area of work, i.e. environmental management, industrial process sectors, investment management, finance and administration, human resource management, etc.

Importance

Attempting to describe a particular position in terms of ALL the competencies needed to perform the job duties assigned to it, would probably have a fairly extensive list. However, within that group is a much smaller group of those competencies that are absolutely imperative to the job. So not all competencies ascribed to a job are necessarily equal in importance. In defining competencies, it is important to distinguish between two differentiating importance: Essentiality and Performance Differentiating.

Essentiality (Threshold Competencies) refers to whether it is **essential** (absolutely necessary) to have this competency in order to successfully perform the essential functions or duties of the position but that do not distinguish the average from superior performer.

Differentiating Competencies refers to a competency that, if present, contributes to the overall performance of the incumbent in the position(s). This dimension is a major feature of the hiring and development process, as it focuses on competencies most likely to identify an applicant who will succeed and be a superior performer on the job.

Proficiency Levels

Proficiency level is the degree of complexity, difficulty, scope, or independence required to apply a competency or behavioural indicator as needed in the job. Proficiency levels describe what expected of both the job and the incumbent.

Performance Levels

Performance Level is the degree to which the competency or behavioural indicator has been completed successfully. The performance levels relate to *how well* the competency or the behaviour indicators are being performed by the incumbent at any proficiency level. The individual incumbent's performance level relates to how closely they have met the expectations of the job.

Behaviour Indicators

Behavioural indicator is a task or action step describing how a competency is applied or demonstrated in a job; a sub-step employed in accomplishing the competency.

Behavioural indicators are examples that indicate how an individual could demonstrate that competency. They are designed to show what effective performance looks like, it is not an exhaustive list. For example: some of the behavioural indicators for communicating with others are - actively listens to people / speaks clearly and concisely / can write in a way that is meaningful to the reader / uses jargon-free language and so on.

Validation

Validation is the process an organisation undertakes to ensure that the competencies that have been developed for a position, group of positions, or the organisation as a whole best describe the position(s). It is based on collecting formal input from those who know the job best, usually the supervisor and the incumbent(s). Sometimes other "subject matter experts" (SMEs), like peers and other co-workers who are familiar with the work or higher level managers or human resource people from within the organisation, are also included.

The validation process can be directly related to the *job analysis* process. The process usually consists five steps: Research and Data Gathering, Competency development, Rating and ranking of competencies (validation), Data analysis and Implementation.

In defining competencies, it is important to distinguish between the threshold competencies and the differentiating competencies.

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Competency Assessment

One of the major steps in both workforce planning and succession planning is to analyse the capacity of the current workforce. Generally, this step comes after leaders have identified the key competencies that will be needed in the future workforce in order to be aligned with the organisation's strategic plan or direction. In other words, "this is what we need, now, how much of that resides within our current talent base?" In order to answer that question, the current workforce needs to be assessed. Sometimes this is done from an organisational or unit perspective in order to improve or enhance the core competencies desired/required by the organisation. In other words, leaders review their staff's capacities overall and develop overall.

Competency-based assessment is the process of collecting evidence and making judgements on whether competence has been achieved. This confirms that an individual can perform to the standard expected in the workplace as expressed in the nationally endorsed competency standards where they exist or on competency standards developed by relevant industry, enterprise, community or professional groups.[18]

Competency assessment is essential in the process of building an employee's career development plan. One of the critical elements of performance management is coaching people to develop the skills that may be holding them back from realising success and eventually moving up the corporate ladder. This development planning process is traditionally tied to an assessment of the individual's skills gaps – assessed against specific competencies, that the organisation believes are valuable. Individuals, managers and HR administrators can each evaluate gaps against the current job or a potential position and devise development strategies accordingly.

The assessment gives the employee a sense of what is necessary to perform at a higher level, and specifically what skills and competencies are necessary to develop for success. The organisation, in turn, gains a sense of the employee's fit and potential within the company as well as a clearer understanding of which competencies result in higher performance. Various methods can be used in competency assessment such as[11]:

- Assessment/Development Centre, 360 Degree feedback, Role plays, Case study, Structured Experiences, Simulations and Business Games.

- Observation: Real work activities at workplace

- Questioning: Self-assessment form, Interview and Written questionnaire

- Review of products: Work samples/products

- Portfolio: Testimonials/references, Work samples/products, Training record, Assessment record, Journal/work diary/log book and Life experience information

- Third party feedback: Interviews with or documentation from employer, supervisor, peers

- Structured activities Project: Presentation, Demonstration, Progressive tasks and Simulation exercise such as role plays.[19]

In order to assess whether a candidate is competent, they are judged against competency standards (benchmarks) developed by industry. A competency standard is comprised of individual units of competency that include the essential information needed to assess a candidate.[20]

The terms 'Competency Unit' and 'Competency Standard' are often used interchangeably because competency standards are usually developed on a competency unit basis. The relationship between a competency unit and a competency standard is similar to that between a course title and the course materials. A competency standard states performance standards that are validated and endorsed by industry to be the minimum performance standards for the industry.[21]

Competency Mapping - Building Competency Models

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Competency mapping is the process of identifying key competencies, for a particular position in an organisation, that are characteristic of high performance and success in a given job. Competency mapping can be applied to a variety of human resource activities.

A Competency Model is a group of competencies that describe successful performance for a particular organisation, function, level, role or job. It describes the competencies required to perform effectively in particular roles. This set of competencies is then used as standards against which to: Select new staff, Develop staff and Evaluate the on-going performance of staff in these roles. Competency Models enable one set of standards to be applied across the full range of human resource processes. This provides a common language and understanding and a consistency when assessing individual performance whether for the purpose of selection, development or performance management.

The competency mapping process does not fit the one-size-fits all formula. It has to be specific to the user organisation. Therefore, models should be developed in a way that draw from but are not defined by existing research, using behavioural interview methods so that the organisation creates a model that reflects its own strategy, its own market, its own customers, and the competencies that bring success in that specific context including national culture.

Challenges in Building Competency Models

Competencies enable employees to achieve results, thereby creating value. It follows that competencies aligned with business objectives help foster an organisation's success. Organisations must understand their core competency needs - the skills, knowledge, behaviours, and abilities that are necessary for people in key roles to deliver business results.

There are certain difficulties related to building competency models. A Competency is a measurable pattern of knowledge, skills, abilities, behaviours, motives and other characteristics that an individual needs to perform work roles or occupational functions successfully. Some of these elements are easy to observe and measure. Other elements are harder to see and measure but make the most difference. (See the figure below). The underlying elements of competencies are less visible but they largely direct and control surface behaviour.
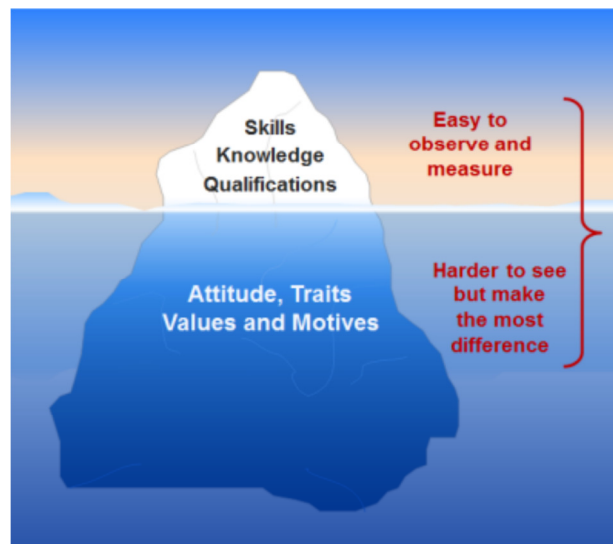
Observable elements versus underlying competencies (Adapted from "The Iceberg Model" in Spencer, L. M. & Spencer, S. M. (1993). Competence at work: Models for superior performance. New York: John Wiley & Sons, Inc. p. 11

There may be two approaches of competency development. It is like a ready-made or tailor-made suit. Each approach has particular strengths and has been developed to suit the particular needs of the economy and context of the country concerned. These two approaches are:

a. Building a competency model from scratch. This option is costly and requires expertise. Building a model that meets this high standard of rigor and effectiveness represents a considerable investment of resources.

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    b.   Using a ready - made model. This option might not work. There is therefore little merit in attempting to prescribe a "one size fits all" model that has not been developed for a specific labour market or training and education system

Organisations often achieve a compromise by customising a ready-made competency model (e.g., adding and modifying competencies and behaviour indicators. This provides a more expedient and cost-effective solution, and results in a competency model that is targeted to the organisation's specific needs.

The mainstream UK approach has shown the value of occupationally-defined standards of functional competence and their applicability to the workplace. The approach adopted in France, Germany and Ireland demonstrates the potential of a multi-dimensional and more analytical conception of KSC. (Page 53).[22]

Examples of Competency-Based Education Systems

Standards and resources within UNESCO's project "ICT Competency Standards for Teachers" (ICT-CST) provide guidelines for all teachers, specifically for planning teacher education programs and training offerings that will prepare them to play an essential role in producing technology capable students. The report stresses that "Both professional development programs for teachers currently in the classroom and programs for preparing future teachers should provide technology-rich experiences throughout all aspects of the training."[23]

The Singapore competency model for teaching consists of one core competency, Nurturing the Whole Child, and four other major competency clusters, Cultivating Knowledge, Winning Hearts and Minds, Working with Others and Knowing Self and Others. Each cluster has two to four competencies. For example, "Cultivating Knowledge" has four key competencies: subject mastery, analytical thinking, initiative, and teaching creatively. The competencies are broken down further into progressive levels of more e1ective behaviours based on the high-performer interviews, and these are used as rating scales. Each level includes descriptions of the specific behaviours a teacher should demonstrate at a particular level of mastery.[24]

Steiner concluded that in Singapore, implementation varies from school to school, but all schools use performance outcome goals - including student learning results - along with competency ratings to determine teacher promotion and pay.[25]

Institute Aminuddin Baki, Ministry of Education in Malaysia developed the High Impact Competencies for Malaysian School Leaders. An instrument named Instrumen Kompetensi Pemimpin Sekolah (KOMPAS[©]) were developed for this. KOMPAS consists of 26 competencies grouped into six domain namely the 'Policy and Direction', 'Instructional and Achievement', 'Change and Innovation', 'People and Relationship', 'Resource and Operation' and 'Personal and Effectiveness'.[26]

The Department of Education in Philippines implemented the National Competency-Based Teacher Standards (NCBTS) Teacher Strengths and Needs Assessment (TSNA). The NCBTS-TSNA is a self-assessment designed to set the ideals for quality teachers. The TSNA consists of seven domains: *Social Regard for Learning*, *The Learning Environment*, *Diversity of Learners*, *Curriculum*, *Planning, Assessing and Reporting, Community Linkages*, and *Personal Growth and Professional Development*.[27]

The Adult Teacher Competencies reflect a hierarchical model that starts with five main areas called Standards. These five areas are divided into either two or three sub-areas called Units. There are 13 Units in all, further divided into 29 sub-areas called Performance Indicators. Each Performance Indicator is divided into specific skill statements called Instructional Competencies. There are a total of 139 Instructional Competencies. Because everyone will display varying levels of skill in different areas, the competencies are classified by level: Novice, Experienced, and Expert (Master), or N, E, and M. This hierarchical pattern is used in both the competencies list and the self-assessment.[28]

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Framework for a Generic Competency Model

A good competency model including a set of competencies should be:

- Manageable: Too many competencies will become confusing and inefficient, clouding rather than clarifying an organisation's priorities.
- Defined Behaviourally: Competencies should be described in terms of specific, observable behaviours.
- Independent: Important behaviours should be included in just one, not multiple, competencies.
- Comprehensive: No important behaviours should be excluded.
- Accessible: Competencies should be written and communicated in a way that is clear, understandable and useful.
- Current: Competencies should be up-to-date, and reviewed regularly to keep pace with industry and company changes.
- Compatible: Competencies should "fit in" with the organisation's vision, values and culture.

According to Boulter, et al (1998), there are six stages involved in defining a competency model for a given job role. These stages are:[29]

- Performance criteria - Defining the criteria for superior performance in the role.
- Criterion sample - Choosing a sample of people performing the role for data collection.
- Data collection - Collecting sample data about behaviours that lead to success.
- Data analysis - Developing hypotheses about the competencies of outstanding performers and how these competencies work together to produce desired results.
- Validation - Validating the results of data collection and analysis.
- Application - Applying the competency models in human resource activities, as needed.

A simple linear competency model may have four dimensions: Competency Type, Proficiency Level, Importance, and Performance Level; as shown below.
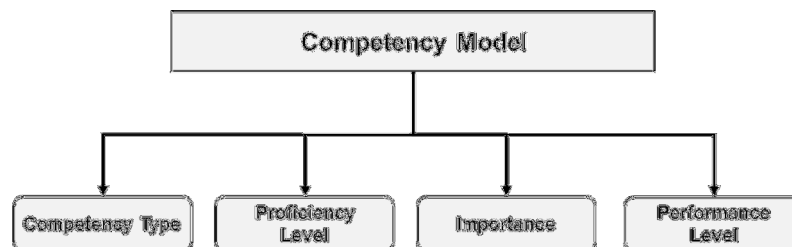
A general competency model has four dimensions

Types of Competencies

There are at least three types of competencies: Core, Profession, and Technical competencies.

Core competency

Profession competency

Technical competency

Proficiency Levels

Several "scales" can be used such as:

Basic

Intermediate

Advanced

Importance

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Three "Importance" levels (A, B and C) of the skill and knowledge are defined as follows:

A   Very important to the job, or

B   of some importance, or

C   of little or no importance

Performance (or Skills) Level

Five Performance levels of skills can be used as follows:

Outstanding – employee consistently completes task or performs function at a very high level with little or no assistance

Very Good – employee consistently complete task or perform functions in an above average manner with little or no assistance

Satisfactory – employee can complete task or perform function in a satisfactory manner with little or no assistance

Need Improvement – employee can complete task or perform function with considerable assistance
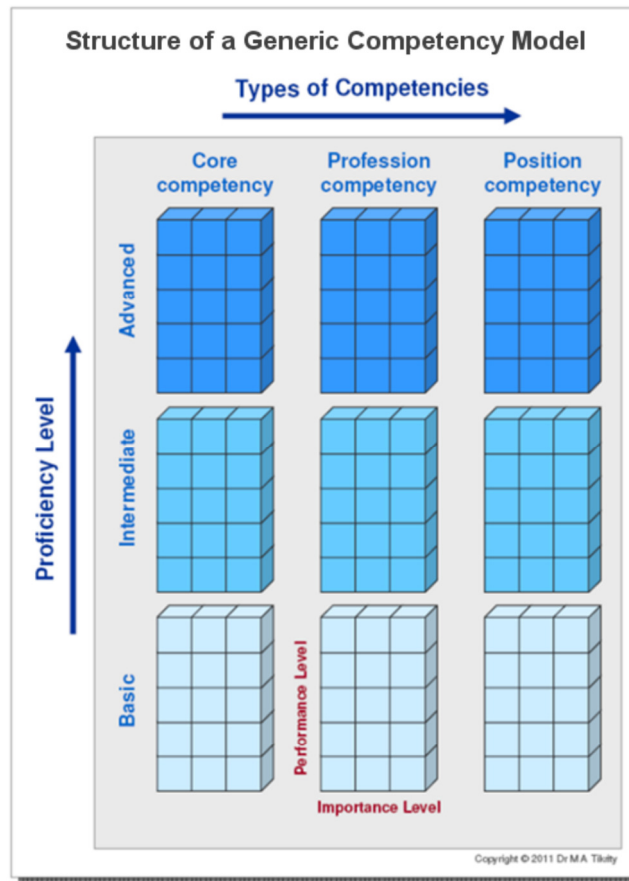
Needs Significant Improvement – employee is unable to complete task or perform function in a satisfactory manner even with assistance.
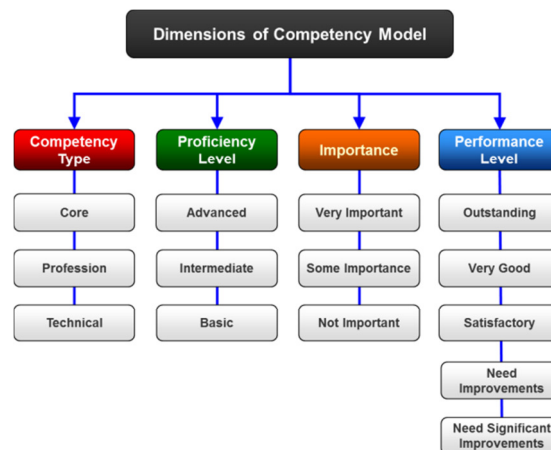
Competency Architecture

Each organisation needs to identify the architecture that best meets its needs. Competency architectures models combined with a competency dictionary are the basic framework for developing competency profiles. Consistent with the requirement for ease of use, organisations typically define a limit on the number of key important competencies that are included in the profile for any role within the organisation. As a rule of thumb, best practice organisations establish a limit on the total number of competencies included in any one profile in the range of 10 to 15.

The four dimensions are presented in a competency architecture as shown in the following figure.

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The competency architecture in the above diagram has three types of competencies, three proficiency levels which results in nine blocks. Each block has two dimensions: performance levels (five levels) and importance levels (three levels) which results in fifteen competency units (competencies or clusters of competencies). Further, each competency has a number (1 – 10) of behaviour indicators. Definitions of competencies and behaviour indicators are developed to form the competency dictionary. Dimensions may be modified to fit the organisational or departmental objectives.

Competency Dictionary

Competency dictionaries include all or most of the general competencies needed to cover all job families as well as competencies that are core or common to all jobs within the organization (e.g., Teamwork; Adaptability; Communication). They may also include competencies that are more closely related to the knowledge and skills needed for specific jobs or functions (e.g., IT skills, financial administration skills). Each competency has a general definition, which provides the user with a general understanding of the type of behaviour addressed by a particular competency. Each competency includes up to five proficiency levels and each level has an associated brief statement describing how that particular level is distinct from the other levels within that competency.

The behavioural indicators at each proficiency level are illustrative of the proficiency level as opposed to representing a definitive list of all possible behaviours at each level. A Competency Dictionary comprises of key Competencies, Competency definitions, Competency types, Competency levels and appropriate supporting behavioural indicators.

Organisations may choose to create their own competency dictionaries, or purchase one that has been developed by experts in competency profiling and competency-based management. The advantage of developing own competency dictionary is that it will reflect the breadth of competencies that are required for success in the organisation expressed in a way that reflects the values, vision and way of communicating within the organisation. On the other hand, this option is very costly and time-consuming, and most do not have the internal expertise to embark on such a venture

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Purchasing a Competency Dictionary from a reputable company has the advantage providing the organisation with a well-developed and researched Dictionary that can be used in a timely manner to support profile development and implementation. The disadvantage is that the Dictionary may not reflect the full range of competencies needed, nor reflect them in a language that is suitable for the organization.

Organisations often achieve a compromise by customising a purchased Competency Dictionary (e.g., adding competencies; modifying the language slightly to reflect the organisation's style of communicating; including additional behavioural indicators to reflect performance expectations of the organisation). This provides a more expedient and cost-effective solution, and results in a Competency Dictionary that is targeted to the organisation's specific needs

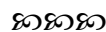## *Tools to Develop Competency Architecture and Competency Dictionary*

Two very effective decision making methods can be employed to develop the competency clusters, behaviour indicators and other aspects of the competency architecture and competency dictionary; nominal group technique (NGT) and Analytical Hierarchy Process (AHP).

Nominal Group Technique

The nominal group technique (NGT) is a decision making method for use among groups of many sizes, who want to make their decision quickly, as by a vote, but want everyone's opinions taken into account (as opposed to traditional voting, where only the largest group is considered) . The method of tallying is the difference. First, every member of the group gives their view of the solution, with a short explanation. Then, duplicate solutions are eliminated from the list of all solutions, and the members proceed to rank the solutions, 1st, 2nd, 3rd, 4th, and so on.[30]

Analytical Hierarchy Process

The Analytic Hierarchy Process (AHP) is a structured technique for organising and analysing complex decisions. Based on mathematics and psychology, it was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since then. It has particular application in group decision making and is used around the world in a wide variety of decision situations, in fields such as government, business, industry, healthcare, and education. [31]

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