

# **An Evolutionary ICT Project Manager Competence Model for the South African Financial Services Industry**

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## **Abstract**

The rapid rate of change in business, technology and the marketplace has exponentially increased pressure on the Financial Service Industry to comply with paradigmatic external and internal forces, to which it is subjected to on a sustained basis. Project managers are at the forefront of such external and internal environmental pressures and are responsible to bring the required level of change in response to dynamic change initiatives; however it has increasingly been observed that project manager skills are critically falling short of both expectations and requirements called for by the various project management tasks.

In mitigation of this challenge faced by the Financial Service Industry, an evolutionary 'ICT Project Manager Competency Model' was designed that focussed on the skills that a project manager requires in the South African Financial Services Industry to amicably serve as the designated change agent against the background of evolutionary change dynamics. The primary aim of the designed 'ICT Project Manager Competency Model' is to support project management activities in the South African Financial Services Industry to head on meet the demands of ever increasing environmental change. The designed 'ICT Project Manager Competency Model' focuses on the Technical, Interpersonal, Contextual, and Conceptual skills underpinned by sufficient tacit and implicit project management experience, all of which are considered absolute requirements for project manager success in the Financial Service Industry.

This designed 'ICT Project Manager Competency Model' has furthermore the potential to provide organisations with information that will assess and develop project manager competence, assist with recruiting staff that have the appropriate project management skill sets, form a foundation for coaching and mentorship, as well as assist in creating development interventions such as training roadmap plans for the Information Communications Technology (ICT) Financial Services project manager community. The designed 'ICT Project Manager Competency Model' in addition has the potential to aid Financial Service Organisations to serve as 'reference mechanism' to determine, which areas their project managers could improve on in order to develop their skill sets and so enhance success rates of projects in highly sophisticated and complex environments.

## **The Financial Services Industry in South Africa**

South Africa's Financial Services industry comprises over R6 trillion in assets, contributing 10.5 per cent to the GDP of the economy annually, employing 3.9 per cent of the employed and contributing at least 15 per cent to corporate income tax (National Treasury, 2011: **Online**). It is supported by sound regulatory and legal frameworks and provides a comprehensive list of services including commercial, retail and merchant banking, mortgage lending, insurance and investments. These services are enabled (operationalised) by ICT.

Information and Communications Technology serves as a key business process enabler for the Financial Services Industry, that provides many opportunities due to its positive impact on cost, performance, ability to capture, display, process, store and communicate information (Bjorkdahl 2011:335). Information and Communications Technology affects social interaction, knowledge distribution, economic and business practices, media, political engagement, education, health, leisure and entertainment (Nayak, Thorat & Kalyankar, 2010:220).

Information and Communications Technology by implication complements other technologies, and has an important impact on the majority of large industries (Bjorkdahl, 2011:335). The complex web of inter-organisational systems, which allow a business to customise business processes rather than standardising according to industry standards, by implication, would culminate into a competitive advantage (Ryssel, Ritter & Gemunden, 2004:197). Technology has played a pertinent role in the Financial Services Industry, not just from an efficiency perspective, but also from the perspective of shaping and changing the industry (Samakovitis, 2012:2).

The Financial Services Industry in South Africa utilises the project management discipline as a strategic imperative (Gray and Larson, 2008:3), as it is considered to be the primary discipline, which brings about change in the Financial Industry business environment. Gartner (2011: **Online**), states that ICT projects constituted US \$3.4 trillion worldwide in 2010. It is estimated that 20% to 35% of all ICT projects fail and up to 80% exceed time and budget projections (Ganly, 2008:1), which imply that the cost of failed ICT projects in South Africa is exorbitant, constituting a major problem for South African Financial Service Organisations relating to bottom line profitability.

## **The project manager domain in Financial Services**

Projects fit into programmes, and programmes reciprocally fit into project portfolios. Projects aim to bring about strategic change in business organisations. Organisations have expressed their concern regarding misalignment of strategic objectives and the organisations' ability to effectively identify, manage and deliver on projects that are targeted to deliver on the objectives of the business. It is an accepted fact that by implication, successful projects enable business objectives. Despite the strategic importance of project management, unsatisfactory success rates prevail, in part as a result of insufficient and or poor project manager skill sets. Project manager skill levels directly and indirectly contribute to project failure. In

South Africa, 20% to 35% of all ICT projects fail and up to 80% exceed time and budget estimates (Ganly, 2008:1). The cost of failed ICT projects therefore amounted to approximately US \$700 Billion in 2010. Barry and Uys (2011:43), found that there is no consensus on the differences between projects in South Africa and projects executed on the international front. Project managers are required to work within highly complex environments as financial institutions are running IT platforms of enormous complexity. The technology stack prevalent in financial organisations manifested over a period of fifty years and are forcing financial institutions to keep a skill set of enormous diversity and raising concerns about operational risk related to technical obsolescence (Banking Industry Architecture Group, 2013: **Online**).

Project managers are facing ever increasing pressure to deliver projects successfully impacted upon adversely by complexity and complex phenomena within Financial Service organisations. Project management is playing a profound role in driving the core of the organisation (Brooks and Combrink, 2005:44). A company's survival and future state depends on its ability to select and execute the right projects, successfully. The ability to execute the right project is paramount to success, and is dependant in part on the right project manager skill sets.

## **Project Manager Skills**

Carbone and Sampson (2004:10), believe that poor project management is the number one cause of project failure. Analogously Gillard (2009:724), states that it takes skill and finesse to lead a project to a successful conclusion given the intricacies of the job of the project manager. In the experience of this author, the project manager must have a broad range of skills, encompassing many functional areas and disciplines, in order to be successful. The unique, collective skill set and personality of each individual, practicing the art of project management, will determine his or her level of success. The appointment of the 'right' project manager has a direct correlation to the success or failure of a project (Burke, 2011:26). The 'right' project manager is able to perform his tasks to high a quality (Ven & Chuang, 2005:136). The project manager must have a general set of skills in order to be successful on various different projects. Since all projects are by definition a once off event, it can be argued that project managers must be able to adapt their skill sets to each individual project they are assigned to. A project manager therefore requires a wide set of competencies to enable project delivery success (Burke, 2009:18).

The IPMA competence baseline is a set of competencies the IPMA has devised through extensive research and provides a guideline for the preparation of training materials, for research purposes and as a general reference document for individuals seeking information about applied project management (IPMA, 2014: **Online**). The IPMA breaks project management down into forty six competence elements, covering the Technical, Behavioural and Contextual competencies required by project managers (IPMA, 2014: **Online**). The 'eye of competence' represents the integration of all the elements of project management as seen from the project manager's perspective when evaluating a specific situation (IPMA, 2014: **Online**). There is no reference to the Conceptual skills that is required, a key factor relevant to Financial Services Organisations globally and in South Africa. The

conceptual oriented roles of the Business Analyst, System Analyst and IT Architect are prevalent in Financial Services Industry projects. The USA based Project Management Institute also refers to the Conceptual component in its project managers skill categorisation as key to being an effective project manager (PMI, 2008:417), where conceptual skills are considered critical to analyse complexity.

Because project managers accomplish work through the project team and other stakeholders (PMI, 2008:417), they need to foster this balance of technical, interpersonal (also referred to as behavioural), and conceptual skills. Adequate project manager skills in South Africa are often very scarce, which compounds the prevailing skills problem. More often than not, less-qualified project managers are appointed under the premise that on-the-job training and experience will bridge the gap, invariably culminating in project failure.

### **Key skills identification**

A structured questionnaire was distributed online to 175 respondents during November 2014. The population consists of Senior IT managers, ICT project managers, project line managers, project team members and project users in the South African Financial Services Industry. The respondents worked in the major four South African Banks, as well as project resources working for vendors that perform project work for the major banks. A 60% response rate was achieved. The key skills identified during the statistical analysis as gleaned from the respondents, the following:

- Interpersonal and group communication skills
- The ability to plan
- The ability to lead
- Project scoping skills.
- Decision making ability; and
- Knowledge skills relating to the various project management methodologies.

Over and above the above quintessential skills, respondents indicated that project managers with more than five years of experience were preferred.

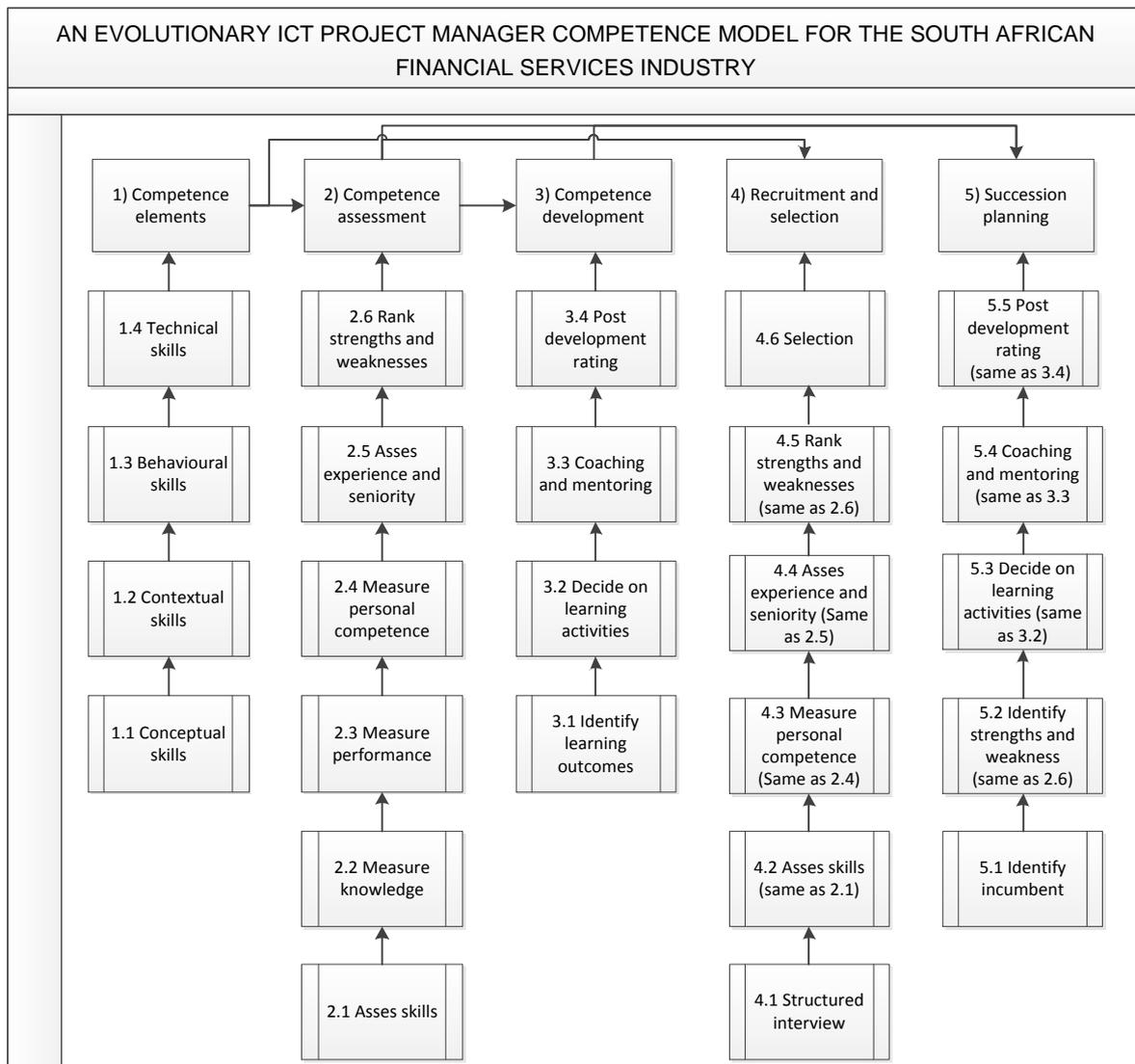
### **Development of the ICT Project Manager Competence Model**

The evolutionary ICT Project Manager Competence Model for the South African Financial Services Industry developed provides a model for the definition, assessment and development of project manager competence for the South African Financial Services Industry. The model in part entails a structured sequence of events. The model defines the sphere of competence and identifies those skills most likely to impact positively on project manager performance. The model will furthermore provide guidance to the South African Financial Services Industry on how to recruit, assess, and plan the development of ICT project managers deployed in the industry. The model can be applied to project managers in the industry,

regardless of the nature, type, size or complexity of the projects they are appointed to. In addition, line managers can utilise the model for recruitment and selection purposes. The model is also applicable to coaching and mentoring activities as the model will identify weak areas of competence that can be developed through coaching activities.

The competency model in essence promotes expected skills and behaviours. The proposed competency model is fundamentally a model that builds project manager capability. Project managers will be requested to demonstrate capability, and if unsuccessful, development and training is targeted at the specific areas requiring attention. The model provides categories of skills, whereby closely related behaviours are organised into competencies and similar competencies are grouped into clusters. The major advantage of the model is that training is automatically aligned to organisational goals, since competencies can be developed to suit specific organisational needs. The competency model is a descriptive tool that helps to identify the required knowledge, skills and behaviours for an employee to perform in a role and to ultimately assist the organisation to reach its strategic objectives.

The competence model is derived from quantessential ICT project manager skills in the local Financial Services Industry, which allows for the definition, assesment and development of project manager competence as it defines the key dimensions of competence and identifies those competencies that are most likely to help project managers be succesful. The competency model includes underlying attributes, skills, traits, knowledge and experience attitudes that are required for successful performance.



*Figure 1: The Evolutionary ICT Project Manager Competence Model for the South African Financial Services Industry*

In formulating competencies, it is necessary to take into account the individual competencies required for a job as well as the external and organisational environment so as to ensure that the competence model align to organisational strategy (Özcelik & Murat, 2006:72). The formulated model aligns to this key principle, in that it is derived from the most important ICT project manager skills gleaned from literature and statistical research, performed amongst key stakeholders in the local Financial Service Industry. The model bridges this gap by building a 360 degree view of the project manager, including the identification of the required knowledge, experience, seniority, performance and provides for a career path. The model further identifies credentials, such as education and certifications.

The evolutionary ICT Project Manager Competence Model for the South African Financial Services Industry developed was synthesised and adapted from the various models and competency development principles. The model in addition

addresses the shortcomings from the reference models and contributes to academia as it addresses the following:

- Assessment for different levels of seniority.
- Assessment of different levels of experience.
- Measurement.
- Financial industry relevant skills.
- ICT relevant skills.
- Ranking of most important skills.
- Cognitive development of weak elements.

It is of importance to note that the process, which is to be followed in utilising the model, is in part sequential, but any part of the process can be utilised in isolation, depending on the task at hand. So for example, if a Line Manager is involved in recruitment and selection of a candidate, only the recruitment and selection component of the elements may be utilised. The process elements of utilising the model are as follows:

- Identification of the skills necessary to perform each task identified.
- Develop evaluation criteria that clarify what should be measured or the level at which an employee should demonstrate a competency.
- Develop an assessment instrument that can be used to identify both individual and group-level skill gaps.
- Develop and implement training initiatives that target the identified skill gaps.
- Employees partake in the process of training and testing until they reach the desired level of competency (assessment).
- Utilising the model in recruitment and selection activities.
- Utilising the model in mentoring, coaching and succession planning.

In order to ensure that the elements of the model are easily referenced and practically deployable, each element of the model illustrated in Figure 1 above are categorised and numbered into primary categories as follows:

- 1) Competence elements
- 2) Competence assessment
- 3) Competence development
- 4) Recruitment and Selection
- 5) Succession planning elements.

Each element is further sub-categorised in order to support the primary elements with sub-elements. The combination of the sub-elements constitutes the primary elements within their relevant categories. All these elements will be discussed in detail, in the following section.

## **Competence components**

The Competence component of the model follows an evolving skills level approach, whereby skills progress on a roadmap from junior level to senior level, each progressing in complexity. The component consists of competency clusters, whereby the main category is further broken down into closely related competencies. The competence component of the model furthermore, follows a two dimensional approach. The first dimension reflects the level of project manager skills, and the second dimension depicts the skill areas required by the project manager. Skill levels are organised into their cognitive complexity where the primary are successive, so that one can be mastered before the next level can be attained. The Competence element follows a sequential stepped approach, increasing in complexity to the highest and most advanced level, which proceeds from simple to complex, and from concrete to abstract. The Competence component therefore represents a cumulative hierarchy, where the project manager may only move to the next, more complex level, once he has mastered the preceding, simpler category. Incorporating this approach, which was in part derived from Bloom's Taxonomy (Krathwohl, 2002:212), will resolve and answer development criteria ranging from basic to an advanced level in the first dimension of the model.

The terms used in the Competence component matrix of the first dimension of Table 1 below, are adapted from Anderson and Krathwohl (2001:67) as:

- **Knowledge:** Retrieving, recognising and recalling relevant knowledge from long term memory.
- **Comprehension:** Constructing meaning from oral, written and graphic messages through interpreting, exemplifying, classifying, summarising, inferring, comparing and explaining.
- **Application:** Carrying out or using a procedure through executing or implementing.
- **Analysis:** Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organising and attributing.
- **Synthesis:** Putting elements together to form a coherent or functional whole; reorganising elements into a new pattern or structure through generating, planning or producing.
- **Evaluation:** Making judgements based on criteria and standards through checking and critiquing.

The ability to perform at the highest level includes the project manager having the necessary information, understanding the information, being able to apply the information, synthesising the information and to evaluate the information. The higher levels therefore always include the lower levels. As stated above, the second dimension of the model depicts the skills identified. The level of maturity is aligned to the levels in Blooms Taxonomy, and the skills listed are those skills identified academic literature, as well as statistical research in the South African Financial Services Industry. These skills must be ranked as most important entries into the second dimension of the Evolutionary ICT Project Manager Competence Model. The action verbs used to assess the project manager along the first dimension of the model is identified in Table 1, Blooms Taxonomy definitions and action verbs (Source: Ven & Chuang, 2005:138 and Clemson University, 2014).

Table 1: Blooms Taxonomy definitions and action verbs

**Bloom's Taxonomy Action Verbs**

Definitions	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
<b>Bloom's Definition</b>	Remember previously learned information.	Demonstrate an understanding of the facts.	Apply knowledge to actual situations.	Break down objects or ideas into simpler parts and find evidence to support generalizations.	Compile component ideas into a new whole or propose alternative solutions.	Make and defend judgments based on internal evidence or external criteria.
<b>Verbs</b>	<ul style="list-style-type: none"> <li>• Arrange</li> <li>• Define</li> <li>• Describe</li> <li>• Duplicate</li> <li>• Identify</li> <li>• Label</li> <li>• List</li> <li>• Match</li> <li>• Memorize</li> <li>• Name</li> <li>• Order</li> <li>• Outline</li> <li>• Recognize</li> <li>• Relate</li> <li>• Recall</li> <li>• Repeat</li> <li>• Reproduce</li> <li>• Select</li> <li>• State</li> </ul>	<ul style="list-style-type: none"> <li>• Classify</li> <li>• Convert</li> <li>• Defend</li> <li>• Describe</li> <li>• Discuss</li> <li>• Distinguish</li> <li>• Estimate</li> <li>• Explain</li> <li>• Express</li> <li>• Extend</li> <li>• Generalized</li> <li>• Give example(s)</li> <li>• Identify</li> <li>• Indicate</li> <li>• Infer</li> <li>• Locate</li> <li>• Paraphrase</li> <li>• Predict</li> <li>• Recognize</li> <li>• Rewrite</li> <li>• Review</li> <li>• Select</li> <li>• Summarize</li> <li>• Translate</li> </ul>	<ul style="list-style-type: none"> <li>• Apply</li> <li>• Change</li> <li>• Choose</li> <li>• Compute</li> <li>• Demonstrate</li> <li>• Discover</li> <li>• Dramatize</li> <li>• Employ</li> <li>• Illustrate</li> <li>• Interpret</li> <li>• Manipulate</li> <li>• Modify</li> <li>• Operate</li> <li>• Practice</li> <li>• Predict</li> <li>• Prepare</li> <li>• Produce</li> <li>• Relate</li> <li>• Schedule</li> <li>• Show</li> <li>• Sketch</li> <li>• Solve</li> <li>• Use</li> <li>• Write</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze</li> <li>• Appraise</li> <li>• Breakdown</li> <li>• Calculate</li> <li>• Categorize</li> <li>• Compare</li> <li>• Contrast</li> <li>• Criticize</li> <li>• Diagram</li> <li>• Differentiate</li> <li>• Discriminate</li> <li>• Distinguish</li> <li>• Examine</li> <li>• Experiment</li> <li>• Identify</li> <li>• Illustrate</li> <li>• Infer</li> <li>• Model</li> <li>• Outline</li> <li>• Point out</li> <li>• Question</li> <li>• Relate</li> <li>• Select</li> <li>• Separate</li> <li>• Subdivide</li> <li>• Test</li> </ul>	<ul style="list-style-type: none"> <li>• Arrange</li> <li>• Assemble</li> <li>• Categorize</li> <li>• Collect</li> <li>• Combine</li> <li>• Comply</li> <li>• Compose</li> <li>• Construct</li> <li>• Create</li> <li>• Design</li> <li>• Develop</li> <li>• Devise</li> <li>• Explain</li> <li>• Formulate</li> <li>• Generate</li> <li>• Plan</li> <li>• Prepare</li> <li>• Rearrange</li> <li>• Reconstruct</li> <li>• Relate</li> <li>• Reorganize</li> <li>• Revise</li> <li>• Rewrite</li> <li>• Set up</li> <li>• Summarize</li> <li>• Synthesize</li> <li>• Tell</li> <li>• Write</li> </ul>	<ul style="list-style-type: none"> <li>• Appraise</li> <li>• Argue</li> <li>• Assess</li> <li>• Attach</li> <li>• Choose</li> <li>• Compare</li> <li>• Conclude</li> <li>• Contrast</li> <li>• Defend</li> <li>• Describe</li> <li>• Discriminate</li> <li>• Estimate</li> <li>• Evaluate</li> <li>• Explain</li> <li>• Judge</li> <li>• Justify</li> <li>• Interpret</li> <li>• Relate</li> <li>• Predict</li> <li>• Rate</li> <li>• Select</li> <li>• Summarize</li> <li>• Support</li> <li>• Value</li> </ul>

The action verbs allows the practitioner with the opportunity to link project manager actions to tasks and classify the task at a certain level, where for example, 'produce requirements' will be categorised as an application level project management skill, as the word 'produce' is categorised under 'application level'. In order to be competent in requirements engineering the practitioner must have mastered the preceding skill levels being the definitions level, knowledge level and comprehension level. All the skills identified will be subjected to the same allocation process as was applied to the 'produce requirements' example above.

## **Competence assessment**

The Competence assessment component of the model provides a suitable assessment mechanism for the measurement of project manager competence, as part of the evolutionary ICT Project Manager Competence Model for the South African Financial Services Industry. Competence measurement is required for the following purposes:

- Provides key input into development planning.
- Provides key measurement data during the recruitment and selection process.
- Facilitates succession planning.
- Provides a coaching and mentoring basis.

The first dimension of the ICT Project Manager Competence Model for the South African Financial Services Industry provides the building blocks for assessment in that a common set of action verbs are linked to an evolving skills level matrix, which provides performance requirements per level of competence. The model defines the areas of success clearly, and serves as a measurement criteria tool for assessment purposes. A key outcome of the model is that it enables measuring ability to perform qualitative and quantitative assessment on project managers, which was a key shortcoming of assessment tools identified in literature. The methodology deployed in the formulation of the ICT Project Manager Competence Model followed will utilise adapted versions of models as upheld by Bezuidenhout and Alt (2011: 1067); Muzio, Fisher, Thomas and Peters (2007:33), as well as the PMCD, (2007:44). In order to operationalise the assesment tool, the following outcome can be gleaned from the reference models:

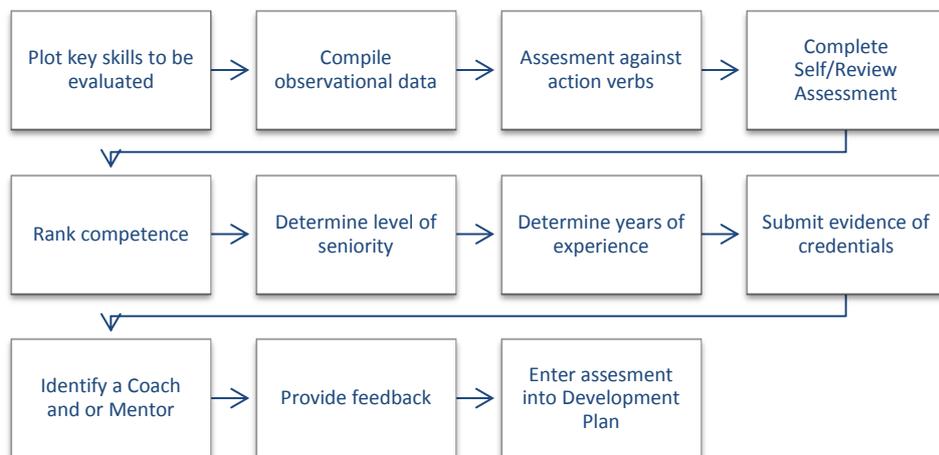
- **Asses skills:** verifies skill levels.
- **Measure knowledge:** Evidence of related credentials obtained during assessment.
- **Measure performance:** Assessing project actions and outcomes related to the PMBOK.
- **Measure personal competence:** Behavioural assessment.
- **Asses level of seniority:** Project Manager Associate to Project Director.

- **Asses experience:** Years of experience.
- **Ranking weak areas:** Of competence for input into the development plan.

**Table 2:** Project Manager Competence Framework Assessment tool for the South African Financial Services Industry

Performance criteria	Skill level						Self Assessment	Reviewer Assessment	
	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation			
<b>Technical skill cluster</b>									
Technical skills									
Evidence of skills									
<b>Contextual skill cluster</b>									
Contextual skills									
Evidence of skills									
<b>Behavioural skills cluster</b>									
Behavioural skills									
Evidence of skills									
<b>Conceptual skill cluster</b>									
Conceptual skill									
Evidence of skill									
Level of Seniority:				Years of experience:					
Evidence of related credentials:									
Coach name:				Mentor name:					
Overall comments:									

The assessment tool provides a project manager competence measurement methodology for the South African Financial Services industry. The outcome of measurement activity provides input into development planning, input into succession planning and provides a basis for coaching and mentoring. Figure 2 below provides an overview of the assesment process.



**Figure 2:** The assessment process for the evolutionary ICT Project Manager Competence Model for the South African Financial Services Industry.

The outcome of the assessment may be categorising the project manager community into simple categories (PMCD, 2007:41), as follows:

- Below expectations or developing competence;
- meet expectations or is competent; and
- exceed expectations or is highly competent.

The methodology incorporates the evolving skill sets and cognitive difficulty by measuring skill sets against a common set of action verbs linked to skill levels through Blooms Taxonomy. The model provides both a qualitative and quantitative measurement. The qualitative assessment is garnered through the performance rating against Blooms action verbs. The quantitative assessment is garnered through the Self-Assessment and Reviewer-Assessment data fields, aligned to the rating scales provided by the PMCD (2007:41). The ratings can be adapted by managers as is deemed fit by the organisation. The following example illustrates the application thereof:

- Below expectations or developing competence (0-49%);
- meet expectations or is competent (50-79%); and
- exceed expectations or is highly competent (80-100%).

Key skills identified are populated on the second dimension of the measurement tool. Line Managers then compile observational data for each element to be measured. Project Managers and Line Management then assess each element against the action verbs provided by Bloom, and mark the relevant data point in the tool. It is preferred that the assessment is performed by a panel so as to ensure that quality assurance is built into the process, and to remove potential subjectivity and discrimination. The project manager then completes the 'Self-Assessment', while the review panel completes the 'Review Assessment'. The assessment then enters the feedback stage, where performance for each element is ranked and strengths and weaknesses are identified. The 'Level of Seniority' is then determined, according to the following levels, gleaned from the IPMA (2014: **Online**):

- **Project Management Associate:** Applies project management knowledge when working on less complex projects and has less than three years experience.
- **Project Manager:** Manages projects of moderate complexity and has a minimum of three years' experience.
- **Senior Project Manager:** Manages complex projects and has a minimum of five years' experience.
- **Director:** Directs complex project portfolios and programmes.

The next step is to determine the years of experience, as 'years of experience' and the 'complexity of projects' that the project manager is capable to manage, is correlated. Statistical research undertaken in the South African Financial Services Industry for this study proved that Associates should be assigned to less complex projects and only seasoned projects managers should be assigned to complex projects. Project Managers should therefore be assigned to projects matching their skill levels to the complexity of the relevant project, and verified through the assessment tool.

It is furthermore necessary for the project manager to provide evidence of industry related credentials. Examples may be the attainment of the Project Management Professional Certification (PMP) or Princell Certification, as this is an indicator of a minimum level of knowledge required and shows competence in having knowledge of the Project Management Body of Knowledge, or project management methodologies.

An important drawback of measuring competence is the subjectivity required to perform the assessment by the project managers' superior PMCD (2007:52). The proposed mitigating strategy is to conduct the assessment in group form so as to remove any bias.

## **Competence development**

The primary aim of the Competence Development Plan is to build on the project managers strengths, and to address development needs. Key output from the assessment tool, will accentuate areas of competence that the project manager performed well in, but also areas in which growth is required. Since the assessment identified weak competence areas, the areas that requires development can now be ranked according to priority. A timeline must accompany each development area. The line manager for the assessed project manager is co-responsible for the development plan, but it is ultimately the project manager who is responsible to own the plan and execute on the items listed in the plan.

To develop skills in a profession, formal education and practice is required to ameliorate weak areas. The organisation can support the project manager in developing the required skills to improve the project initiatives of the company by having a program to develop project management competencies. The project manager development program must consist of both formal training and experience.

A key requirement was to develop project manager cultural knowledge, which is knowledge created, shared and used by groups of people working together; networking or socially interacting with each other within a specific context. Cultural knowledge can therefore be garnered through Coaching and Mentoring.

- **Mentoring:** Assign a go-to person when a project manager requires advice on project issues.

- **Coaching:** Appoint a knowledgeable senior to work with the project manager to help learn from the coaches' experience and project manager environment, within the organisation.

Assigning a mentor and coach to a project manager can therefore reap benefit to the organisation as the likelihood of success is higher. This is aligned to the concept of Social Cognitive Theory, which holds the view that people learn from watching others (Social Cognitive Theory, 2014). Observational or social learning focuses on component processes needed to model and learn behaviour, which are attention, retention, behaviour production, and motivation.

Apart from Mentoring and Coaching, development needs may be addressed in a number of ways (PMCD, 2007:45):

- Peer to Peer training;
- on the job training;
- group training;
- in house training;
- computer based training; and
- individual training.

Finally, the requirement to measure and develop personnel knowledge must be addressed. Eraut (2004:249), argues that skills must be viewed in the context of knowledge and learning, and that personnel knowledge is the totality of a person's knowledge and background knowledge. There is no specific data field in the assessment tool of the Project Manager Competence Model for the South African Financial Services Industry, but measuring and developing personnel knowledge is rather the culmination of the total assessment process, as an end to end view of the individual can only be gleaned once all relevant data regarding the individuals competence is obtained and processed.

**Table 3:** *The Development Plan for the Project Manager Competence Framework for the South African Financial Service Industry*

Learning outcomes	Learning activity	Target date	Coach / Mentor name	Pre development rating	Post development rating

## Recruitment and selection

The competency model can also be used to develop structured interview questions and performance evaluation documents as a means of creating an integrated system developed from the competencies identified and validated. The competence model therefore plays a central role in the selection process as part of recruitment. The competence model can assist in identifying skills levels of job candidates, and can assist in the decision making process of hiring the best possible candidate.

The assessment tool developed is adapted to solve the requirement of having an assessment tool available during the recruitment and selection process. During candidate screening and interviewing, the assessor can garner data from the incumbent, based on the adapted assessment tool, in order to verify skill and experience levels. Since the measurement tool provides a measure of competence, incumbents can be rated and the selection process can be facilitated through the evaluation of mapped interview data.

**Table 4:** Recruitment and selection assessment tool for the Project Manager Competence Framework for the South African Financial Services Industry

Performance criteria	Skill level						Reviewer Assessment
	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	
<b>Technical skill cluster</b>							
Technical skills							
Evidence of skills							
<b>Contextual skill cluster</b>							
Contextual skills							
Evidence of skills							
<b>Behavioural skills cluster</b>							
Behavioural skills							
Evidence of skills							
<b>Conceptual skill cluster</b>							
Conceptual skill							
Evidence of skill							
Level of Seniority:				Years of experience:			
Evidence of related credentials:							
Overall comments:							

The recruitment and selection tool ‘inherits’ all the components of the Competence Assessment element of the model, but is adapted to solve the requirements of the interview process, by excluding the Self-Assessment, and Mentoring and Coaching data fields.

## Succession planning

The Succession planning element of the model provides a means of helping to identify individual areas of strength and also areas for improvement, particularly with an advanced career plan in mind. The incumbent must be exposed to skills and

behaviours of the position that he has been identified to be promoted to. Individual behaviour is driven by behavioural intentions (theory of planned behaviour), where behavioural intentions are a function of an individual's attitude toward the behaviour, the subjective norms surrounding the performance of the behaviour, and the individual's perception of the ease with which the behaviour can be performed, or behavioural control. Through this element, the incumbent is supported by a succession planning programme, whereby the individual is exposed to a person deemed to be successful in the identified role, and whose behaviour can be modelled with the view of the incumbent having a better chance of success if behaviour is modelled.

The ICT Project Manager Competence Model for the South African Financial Services Industry can complement the succession process as the evolving skill levels in the measurement tool can help establish the level of competence the incumbent has, and assumptions can then be drawn in terms of how far or how close the person is in terms of being promoted. Interventions can be constructed to succour the succession process according to the assessment output.

**Table 5:** Succession tool for the Project Manager Competence Framework for the South African Financial Services Industry

Performance criteria	Skill level						Reviewer Assessment
	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	
<b>Technical skill cluster</b>							
Technical skills							
Evidence of skills							
<b>Contextual skill cluster</b>							
Contextual skills							
Evidence of skills							
<b>Behavioural skills cluster</b>							
Behavioural skills							
Evidence of skills							
<b>Conceptual skill cluster</b>							
Conceptual skill							
Evidence of skill							
Level of Seniority:				Years of experience:			
Evidence of related credentials:							
Overall comments:							

The Succession Planning element inherits all the components of the Competence Assessment component, but is adapted to solve the requirements of the succession process, by excluding the Self-Assessment, and Mentoring and Coaching data fields.

### CROSS REFERENCING OF MODEL COMPONENTS TO SOURCES

In this paragraph, the theoretical underpinning of the model is expanded upon in detail. All the elements required to operationalise the ICT Project Manager Competence Model that would provide a robust theoretical underpinning are listed below:

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- **Definition of model:** Cleland and King (1972:40); Le Deist *et al.* (2005:27); Whiddett and Hollyforde (2000:22); PMCD, (2007:9).
  - **Use and characteristics of competence models:** Naquin and Holton (2006:144); Özcelik and Murat (2006:72); Smith *et al.* (2008:100); Muzio *et al.* (2007:33); Morris and Punto (2007:144); Whiddett and Hollyforde (2000:22); Eyde *et al.* (1999:56); Overby and Suvanujasiri (2012:1073); Pennypacker and Grant (2003:7); PMCD, 2007:1-91)
  - **The Competence element: Blooms Taxonomy:** (Bezuidenhout and Alt (2011:1066); Forehand (2014: **Online**); Krathwohl (2002:212); Anderson and Krathwohl (2001:67); Ven and Chuang (2005:138); Pennypacker and Grant (2003:6); Eraut (2004:249).
    - The competency approach of Özcelik and Murat (2006:72).
    - The evolving skill level approach Smith *et al.*, (2008:100).
    - The skill category model of Muzio *et al.*, (2007:33).
    - The effective job performance model of Morris and Pinto (2007:144).
    - Knowledge and learning principles of Eraut (2004:249).
    - Competency based framework of Whiddett and Hollyforde (2000:22).
    - Principles for developing competency models of Naquin and Holton (2006:144).
    - The competence model (Eyde *et al.*, 1999:56).
    - The competence model of Overby and Suvanujasiri (2012:1073).
    - SSQ model of Muzio *et al.*, (2007:33).
    - The project management maturity model of Pennypacker and Grant, (2003:7).
    - The PMCD competence framework of the PMCD, (2007:39).
  - **Competence assessment:** – Muzio *et al.* (2007:31); Bezuidenhout and Alt (2011:1067); PMCD (2006:1-93)
  - **The competence development plan:** - (PMCD, 2007:39); Carbone and Sampson (2004:10); Eraut (2004:249); Social Cognitive Theory (2014); Smith *et al.*, (2008:99); Smith and Pourchout (2008:17); Snowman (1997:151); Farrell (2010:581); Mayer (1983:260); Burgess (2000:3); Hadji (2000:31); Feuerstein and Feuerstein (1991:3); Kozulin, (2002:9); Fischer (1980:477).
  - **Utilising the model in recruitment:** Naquin and Holton (2006:144).
  - **Utilising the model in succession planning:** Public Management institute (2014: **Online**) Theory of Planned Behaviour (2014: **Online**)

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