Personal Performance Measurement of Project Manager using Project Manager Competency Development Framework (PMCDF®) (Case Study PT.XYZ)

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Abstract. PT. XYZ is a company engaged in telecommunications construction. So far, the company has conducted performance appraisals of its employees using the rating scale method. The assessment conducted by the company is less objective because the assessment is carried out by two supervisors of the object being assessed. In addition, the results are only used for consideration of promotion. The format made by the company also has no KPI or minimum value used in assessing. Based on this, a valuation format and a more objective assessment system are needed with the aim of knowing how the personal competencies of managers. Personal competency measurements are carried out at the project manager level with an assessment format based on PMCDF®, 360 feedbacks as a scoring system, and AHP as weighting on six PMCDF® competencies. From the results of the study, the priority results obtained in the six competencies variable PMCDF® are Managing with a weight of 40%, Leading with a weight of 23%, and Communicating with a weight of 11%. The personal competency score of the project manager for each competence is in good category.

1. Introduction
Performance is a form of work performance, which, when defined and the type of measurement, becomes a challenge for researchers in management theory and organizational behavior because of its multidimensional nature. Thus, in performance measurement, it is better to interact with various dimensions in its analysis [1] Personal competence is one aspect that can be assessed to find out how the behavior or attitude of employees towards the activities provided by looking at their reactions and characteristics. For further development, measurement of personal competence can be done to identify the strengths and weaknesses of managers. Also, in the measurement of personal competence can measure and see the behavior of project managers towards overall competence in managing a given project [2].

In measuring employee personal competence, a company needs a framework that is suitable for a type of company. One of the frameworks is PMCDF® (Project Manager Competency Development Framework). PMCDF® is a working model framework for measuring employee performance, especially project managers. PMCDF® also provides a framework for defining, assessing, and developing the competencies of project managers [3].
Several researchers have done some research related to performance measurement with various types of research objects. Among them (Subandiyah Azis et al [4]; Alsy et al [5]; Alroaia & Najafi [6]; Kaur & Kumar et al. [7]; and Widyasarna et al. [8]) examined the measurement through survey results or the distribution of questionnaires with 360 degrees. In this study, it tends to assess construction companies, offices / public sector companies, and companies engaged in services. Research conducted by Azis et al. shows that attitudes and behaviors are the most influential factors on the characteristics of project managers. Project manager competencies used in Azis research, the results of a review of several related journals. Despite knowing the most influential factors, the magnitude of the characteristic weights is still unknown, and the level of manager's achievement position is unknown. Another case with the research conducted by Alsy et al. In her study, the measurement of managers using PMCDF has fairly good results. But they only know the value gap between the results of assessments from superiors, self-assessment, peers, and subordinates. So, the achievement of the managerial level at PMCDF is still unknown. Research on Alroaia & Najafi is carried out only by weighting each competency. The result of weighting is known that cognitive, technical skills are important characteristics that are influenced by human and personal characters. Furthermore, research conducted by Kaur & Kumar assesses project managers from three different levels, namely deputy managers, senior managers, and junior managers. The competencies used are the three competencies from the results of the literature review conducted. Kaur & Kumar's research only looks at competency gaps between three different manager levels without knowing the weight of competencies. Next research conducted by Widyasarna et al. Based on the research, the characteristics of the project manager that have the most influence on the building construction projects are the social skill aspect. The social skill aspect has percentage 33.08%. 74.58% of managers' characteristics are influenced by social, conceptual, and technical skills, while other factors influence 25.42%. In his research, it was only limited to identifying which competencies were most influential. However, it was unknown where the project manager's value position was.

Based on a review of previous researches, some gaps that occur can still be develop. Mostly, it only evaluates managers but only sees the gap between managers, the gap between the results of the assessment, or the effect of competence to the project. If they do weighting, it is unknown how the value or competency level of the manager. Therefore, this research will be weighted and assessed by the project manager using PMCDF as the evaluation standard.

In one of the companies engaged in construction services working on the installation of telecommunications networks, has a format to assess its employees. The company uses the rating scale method in providing value for employee performance. In the form of the assessment, it is less clear regarding the KPI and the minimum value of the appraisal. Construction companies have different characteristics because construction companies are accustomed to working on various kinds of projects. Projects are a way to get business value[2]. The characteristics of each project are different, and it can be said that the project has dynamic characteristics. Therefore, measurement of personal competence is needed to find out how the attitude and behavior of the project manager for each project undertaken. So, we need a format or framework that is suitable for assessing project managers in the company. Based on this, the fishbone is composed as follows:

![Figure 1. Fishbone](image-url)
The use of an existing format can measure managers well, but the drawback of that format is the difficulty of knowing managers’ achievements. Besides, the form is still not enough to describe how the attitude and behavior of the project manager for each project undertaken. Based on this, this study will assess project managers with the PMCDF® framework by looking at the personal dimensions of the manager. Of the several divisions in PT.XYZ, Division of Operations and Maintenance has the responsibility for implementing the project. In this division, they have manager that always involved in every project that is carried out to get a better personal competency value of the PT.XYZ project manager, this study conducted an assessment based on PMCDF® standards.

2. Method
In this study has a conceptual model that is used to describe and explain research concepts in the form of logic models. This method flow illustrates the process of collecting data to conclusion.

- Literature Review
- Problem Formulation
- Study Objectives
- Spreading Questionnaire to Assess
- Weighting Competencies with AHP
- Analysis Identification of project competency levels
- Analysis of Project Competency Weights
- Analysis of project manager competency gaps
- Conclusion

**Figure 2. Method Flow**

The Method Flow in Figure 2 was illustrate formulation for each process. Literature study is carried out by reading journals related to the competence of the project manager, then the background and study of the literature are studied to get the formulation of the problem, and continued determination of research objectives. Next, the preparation of the questionnaire uses the six PMCDF® instruments namely:

1. Communication: An Effectiveness of communication to disseminate information in a timely, accurate, appropriate, and relevant manner with stakeholder.
2. Leading: Direct, inspire and motivate team members and other stakeholders in managing and solving project problems to achieve project objectives effectively.
3. Manage: Managing project with effectively through deployment and use of human, financial, material, intellectual, and intangible resources.
4. Cognitive ability: Applies an appropriate depth of perception, discernment, and judgment to developing the project effectively.
5. Effectiveness: Provide the desired result according to the needs of the project using appropriate resources, tools, and techniques in all project management activities.
6. Professionalism: Comply with ethical behavior that governed by responsibility, respect, fairness, and honesty has been determined in managing projects.

Those competencies will be interpreted to questionnaire with 360-degree measures for maximum results. Besides 360-degrees, this study also weighted the six instruments using Analytical Hierarchy Priority (AHP) to determine which competencies had the highest weight according to the company.

3. Result and Discussion
Based on the results of processing data from its own measurements and the assessment of the combination (360 degree and AHP method) there are several gaps that occur between minimum
score and current score. Table and Chart can be see on Appendix A.

In Table 1, show that Managing competency has the highest weight with a percentage of 40%, which means PT. XYZ prioritizes managing competencies in each of its project managers. Then, leading competence becomes the second priority competency with a weight of 23%, and in the third-place communicating competence with a weighting of 11%. The higher the weight, the higher the effect on the personal competence of the project manager. These weights will be related to the results of the appraisers of the three project managers at PT. XYZ.

From the results of the assessment of the manager A, have the highest value in Professionalism, Leading, and Managing with an average value of 30.6; 29.3; 29.9. Where if interpreted into a percentage, they had a percentage of 85%; 81%; 83%. So that it has a category score of 5, which mean good. Furthermore, for the lowest score, the Manager A is in communication competence with an average value for each manager of 16.8. If the average value is being present into a percentage, communication has a percentage of each manager of 47%, so that it has a category score of 3 which means rather not good. Communication competence is a competency seen from how managers use appropriate methods in exchanging information effectively, timely, accurately, precisely, and relevant to stakeholders.

3.1 Communication.
Manager A scores of each of the four elements of communication competence (C) are known. In the active element of listening, understanding and responding to stakeholders (C1) the competency score of the Manager A is 5 namely in good category. In the element of maintaining communication lines (C2) the competency score of the Manager A is 1, which means that the category is very poor. In the element of ensuring the quality of information (C3) the competency score of the Manager A is 1 which means it is not very good. In the element of discouraging communication to the audience (C4) the competency score of Manager A is 5 which means good. So, on communication competence the average of total score is 5 which means Manager A communication is in good category.

3.2 Leading.
Manager A is known to score each of the five elements of leading competency (L). In the element of creating a team environment that encourages high performance (L1) the competency score of the Manager A is 5 which means in the good category. In the element of building and maintaining an effective relationship (L2) the competency score of the Manager A is 5 which means in the good category. On the motivating element and the mentor of the project team member (L3) the competency score of the Manager A is 5 which means in the good category. In the element of taking responsibility for running the project (L4) the competency score of the Manager A is 5 which means in the good category. In the element of using influential skills when needed (L5) the competency score of the Manager A is 5 which means in the good category.

3.3 Managing.
Manager A is known to score each of the three elements of Managing (M) competence. In the element of building and maintaining a project team (M1) the competency score of the Manager A is 1 which means that the category is not very good. On the elements of planning and managing project success in organized governance (M2) the competency score of the Manager A is 5 which means in the good category. On the element of resolving conflicts involving the project team or stakeholders (M3) the competency score of the Manager A is 5 which means in the good category.

3.4 Cognitive Ability.
Manager A known the score of each of the four elements of Cognitive Ability (CA) competence. In the element of taking a view of the characteristics of the project (CA1) the competency score of the Manager A is 5 which means in the good category. On the elements of effectively solving problems
and solving problems (CA2) the competency score of the Manager A is 1 which means that in the very bad category. In the elements of using appropriate project management tools and techniques (CA3) the competency score of the Manager A is 5 which means that in the good category. In the element of looking for opportunities to improve project results (CA4) the competency score in the Planning and Control Project Manager is 5 which means in the good category.

3.5 Effectiveness.
In Manager A, scores are known for each of the four elements of competency Effectiveness (E). In the project problem solving element (E1) the competency score of the Manager A is 5 which means in the good category. In the element of maintaining involvement, motivation, and support of project stakeholders (E2) the competency score of the Manager A is 1 which means that the category is not very good. In the element of change in the speed needed to meet the needs of the project (E3) the competency score in the Planning and Control Project Manager is 6 which means in the excellent category. In the element of using assertiveness when needed (E4) the competency score in the Manager A is 1 which means that in the category is not very good.

3.6 Professionalism.
In Manager A, scores were known for each of the four elements of Professionalism (P) competence. The element shows commitment to the project (P1) The competency score of the Manager A is 5, which means in the good category. In the element of operation with integrity (P2) the competency score of the Manager A is 5, which means that it is in the good category. In the element of dealing with personal and team difficulties in a suitable manner (P3) the competency score of Manager A is 5 which means in the good category. On the elements of solving individual and organizational problems with objectivity (P4) the competency score of the Manager A is 6, which means in the excellent category.

4. Conclusion
Based on the results of the analysis that the Manager A experienced a decrease in the value of the several elements. It can be see in Appendix A. To cover the gap that occurs due to a decrease in value between the current score and the minimum score can be done with training in accordance with the required competencies. The training is conducted in accordance with the required competency gaps such as communication competencies, managing, cognitive abilities, and effectiveness. For further research, it is suggested to weighting the element of each competence to get the maximum result.

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Appendix A.

### Table 1. Result of Average Score

| Competence         | Weight | Result Score Manager A | Avg | Percent | Category |
|---------------------|--------|-------------------------|-----|---------|----------|
| Managing            | 40%    | 29.9                    | 83% | 5       |
| Leading             | 23%    | 29.3                    | 81% | 5       |
| Communicating       | 11%    | 16.8                    | 47% | 3       |
| Professionalism     | 10%    | 30.6                    | 85% | 5       |
| Effectiveness       | 9%     | 18.7                    | 52% | 3       |
| Cognitive Ability   | 7%     | 24.7                    | 69% | 4       |

![Figure 3. Result Score Average](image1.png)

![Figure 4. Gap Chart Communication Skill](image2.png)

![Figure 5. Gap Chart Effectiveness Skill](image3.png)

![Figure 6. Gap Chart Cognitive Ability Skill](image4.png)

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