

致 Raghav Nandyal 先生:

首先, 我代表公司对评估小组此次针对中科三清科技有限公司做的 CMMI 高成熟度评估表达最诚挚的敬意与感谢。

公司自 2016 年着手软件开发过程改进以来, CMMI 给公司带来了很大的提升, 无论强调是业务目标对过程改进的驱动作用, 还是要通过性能变化来衡量改进效果, 以及要求高层经理对过程改进的具体参与, 都是最终要把员工的行为固化为工作习惯, 切切实实解决公司当前面对的项目性能等棘手问题。

本次 CMMI 高成熟度评估从 4 月 11 日正式开始。我代表公司再次感谢评估小组的大力支持。评估小组成员发现的三十多个弱项精准地暴露了公司过程中的一些薄弱环节。我认为已发现的弱项能够 100% 准确地反映出公司工程管理领域存在的不足。通过本次评估, 我认为至少在以下几个方面获得经验教训:

1. 项目规划中人力资源技能部分的规划非常重要, 本次评估中提出的我们以往只要求了角色应具备哪些能力, 并未真正评估该角色应掌握的能力程度、经验, 并建议增加此项评估, 更好的识别人员能力水平。这些建议非常值得我们重视和学习。
2. 在高成熟度的实践过程中, 量化管理尤为重要, 量化数据的获取和分析可以帮助我们更准确地识别出公司各种过程的真实情况。本次评估过程中提出的一些关于量化管理方面的改进建议, 包括组织收集的度量数据比较复杂, 并且没有相关的删选错误数据的控制, 明显的错误输入无法被快速识别到等。公司会将这方面的问题作为后续改进中的重点进行落实。
3. 项目规划过程的高效落实涉及干系人的管理, 这将决定项目执行的成败。在本次评估中, 评估小组发现在项目规划评审时未邀请客户参与评审, 并建议邀请客户评审达成共识, 以有利于推动项目目标的达成。这个弱项的暴露可能就是目前有些项目范围蔓延和风险管理失控的元凶, 公司会将这方面的问题作为后续改进中的重点, 以确保项目目标的顺利达成。
4. 基于公司管理的要求, 公司制定和部署了《原因分析和解决方案过程定义》和相关的指南、模版。本次评估中发现, 已经进行了根本原因改进前和改进后的分析, 但是没有在分析表中体现出改进前后具体改进措施的描述, 对如何保证改进效果的达

成没有进行描述。这个薄弱过程需要改进，以便于我们依据对项目如进度、成本、质量的影响，对浅层次的原因采取纠正措施，对深层次的根本原因采取预防措施，并确保措施更好的落地执行。

5. 项目管理是一个个环环相扣的过程组合，每一个过程的结果都会影响到其他过程的成败，所以每个过程的管理都要落实到细节，而不是只注重整体结果。在本次评估中，评估小组发现，在配置管理计划中存在版本日期错误，以及在需求变更后，在需求跟踪矩阵中没有详细的记录。这些细节看似不足以影响单个项目的进度，但实际对于公司的整体管理水平的提升却产生了很大的障碍。细节决定成败，因此这些建议也非常值得我们重视。
6. 人、技术、过程三者并重。技术靠人来使用，过程靠人来执行，人是地基和基础。同样的技术、同样的过程由不同人去落地，效果差别很大，因此要重视对人的能力的培养。我们在评估过程中，发现培训投入不足给公司的管理带来一系列的问题。因此在后续的改进过程中，我们要对“确定的培训需求”、“管理的培训”和“实现的培训”做数据分析工作，同时要确定项目和组织中每年有多少人需要接受培训，以提高内部的能力和增长的百分比。组织培训需要以增长内部能力为驱动力，以确保项目拥有超过最低工作要求的技能基础上做能力的提升。
7. 在本次评估中，评估小组提出的一条建议：“目前组织级方针是按照顺利执行的过程编写的，假设一切顺利，但如果不是按照正常情况进行的话，应该怎么办。比如在培训过程中学员没有达到预期的效果，建议在方针中体现未达到预期情况应如何去处理。”这确实是我们目前的现状，高级管理者对于公司过程管理中的指导，都是基于所有问题顺利进行的情况下进行的，公司应该建立一些错误保护机制，以保证由于无法按照顺利进行的情况下应该如何执行。

通过本次 CMMI 高成熟度评估，我看到公司在项目过程中的弱项都得到了暴露，参与本次评估活动的所有成员也都受益非浅。根据评估过程的反馈，我认为评估小组对于本次评估活动的组织和安排高效有序，对公司各个弱项的发现也都一针见血。CMMI 方法论与公司实践应用相结合，给大家带更多启迪、思考和借鉴，以后可以更好地帮助我们通过过程改进持续提升业务绩效、并最终实现业务目标。因此，非常感谢评估小组在本次评估活动中各项工作安排的良苦用心。

即使在本次评估结束之后，但公司的改进过程却一刻也不能停止，基于改进机会，我接下来的工作计划中增加了以下内容来进一步保障此次评估给公司带来的帮助：

1. 4月下旬，公司将会针对本次 CMMI 高成熟度评估做回顾和总结会议。届时公司高层经理，EPG 组长、ATM 成员将会参与会议，向组织全体成员介绍针对本次评估改进机会的详细内容以及改进措施。EPG 小组将全权负责改进活动，内部 ATM 将进行指导。
2. 上述的改进会议和工作势必将成为我在后续工作中非常重要的一环，我将密切关注过程改进中产生的数据及成效分析，让组织级的数据形成模型，并针对模型达到量化的持续改进。

最后再次感谢评估小组带给公司更多的帮助和改进建议，不断提升公司的成熟度。



Dear Mr. Raghav Nandyal.

First of all, on behalf of the company, I would like to express my most sincere respect and gratitude to the appraisal team for this CMMI high maturity scoped appraisal done for 3Clear Technology Co., Ltd.

Since the company started the software development process improvement in 2016, CMMI has brought a great improvement to the company, whether it is emphasizing the role of business objectives to drive the process improvement, or the need to measure the improvement effect through performance changes, and the requirement of specific involvement of senior managers in the process improvement, all of them are to ultimately solidify the behavior of employees into work habits and practically solve the current project performance.

The CMMI high maturity scoped appraisal officially started on April 11. On behalf of the company, I would like to thank the appraisal team again for their great support. More than thirty weaknesses identified by the appraisal team members have accurately reflected those weaknesses in the company's process. I believe that the identified weaknesses are a 100% accurate reflection of the deficiencies in the area of engineering management of the company. As a result of this appraisal, I believe that lessons were learned in at least the following areas.

1. the planning of the HR skills component of project planning is very important, and this appraisal suggests that we have only required what competencies the role should have in the past, without really assessing the degree of competency and experience the role should have. Appraisal team suggest to add this assessment to better identify the competency level of personnel. These suggestions are well worth our attention and learning.

2. In the process of high maturity practice, quantitative management is particularly important, and the acquisition and analysis of quantitative data can help us more accurately identify the real situation of various processes in the company. Some suggestions for improvement in quantitative management made during this appraisal include the complexity of the metrics data collected by the organization and the lack of relevant controls for censoring potential erroneous data, and the inability of obvious erroneous inputs to be quickly identified. The company will implement this aspect as a priority in subsequent improvements.

3. The efficient implementation of the project planning process involves the management of stakeholders, which will determine the success or failure of the project implementation. In this appraisal, the appraisal team found that the client was not invited to participate in the project planning review, and recommended that the client be invited to review to reach a consensus in order to facilitate the achievement of project goals. The exposure of this weakness may be the culprit of the spreading scope and out-of-control risk management of some of our current projects, and we will make this aspect a focus in the follow-up improvement to ensure the successful achievement of project goals.

4. Based on the company's management requirements, the company has developed and deployed the *Cause Analysis and Solution Process Definition* and related guidelines and templates. In this appraisal, it was found that the analysis before and after root cause improvement had been conducted, but the description of specific improvement measures before and after improvement was not reflected in the analysis form, and there was no

description of how to ensure the achievement of improvement results. This weak process needs to be improved so that we can take corrective measures for shallow direct causes and preventive measures for deep root causes based on the impact on projects such as schedule, cost, and quality, and ensure better implementation of the measures.

5. Project management is a combination of interlocking processes, and the result of each process affects the success or failure of the others, so the management of each process should be implemented to the details, rather than just focusing on the overall result. In this evaluation, the appraisal team found that there were version date errors in the configuration management plan, as well as a lack of detailed documentation in the requirements tracking matrix after requirements changes. These details may not seem like enough to affect the progress of individual projects, but they actually create a significant obstacle to the company's overall management improvement. Details make the difference between success and failure, so these suggestions are also well worth our attention.

6. People, technology and process are all important. Technology relies on people to use, the process relies on people to implement, people are the foundation and foundation. The same technology, the same process by different people to the ground, the effect varies greatly, so we should pay attention to the development of human capacity. During the appraisal process, we found that insufficient investment in training brought a series of problems to the management of the company. Therefore, in the follow-up improvement process, we have to do data analysis work on "identified training needs", "managed training" and "realized training", as well as to determine how many people in the project and The percentage of people in the organization that need to be trained each year to improve internal capacity and growth. Organizational training needs to be driven by growth in internal capacity to ensure that programs have a skill base that exceeds the minimum job requirements to do the competencies.

7. A recommendation from the appraisal team in this evaluation: "The current organizational level approach is written to follow a smooth implementation process, assuming **all goes well**, but what should be done if it does not go as intention. For example, if trainees do not meet expectations during the training process, it is recommended that the guidelines reflect how the failure to meet expectations should be handled." This is really our current situation, senior managers for the company process management in the guidance, are based on all issues smoothly, we should establish some error protection mechanism to ensure that due to the failure to follow the smooth situation should be how to perform.

Through this CMMI high maturity scoped appraisal, I saw that all the weaknesses of us in the project process were exposed and all the members who participated in this appraisal activity benefited a lot. Based on the feedback from the appraisal process, I think the appraisal team organized and arranged the appraisal activity in an efficient and orderly manner, and identified the weaknesses of us, and the combination of CMMI methodology and the company's practical application gave us more enlightenment, thinking and reference, which can better help us to continuously improve our business performance and ultimately achieve our business goals through process improvement in the future. Therefore, I am very grateful to the appraisal team for their good intention in arranging the work in this appraisal activity.

Even after the appraisal is over, our improvement process cannot be stopped even for a

moment. Based on the improvement opportunities, I have added the following to my next schedule to further ensure that the appraisal findings will help the company.

1. In late April, we will do a review and summary meeting for this CMMI high maturity scoped appraisal. The EPG team will be responsible for the improvement activities and the internal ATM will provide guidance.

2. The improvement discussion meetings and work described above will certainly become a very important part of my follow-up work. I will pay close attention to the data generated from the process improvement and the analysis of its effectiveness, so that the organization-level data can be modeled and quantified for continuous improvement.

Finally, I would like to thank the appraisal team again for bringing valuable help and improvement suggestions to the company to continuously improve the maturity level of the company.



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3Clear Technology Co., Ltd.