

发起人高层会议总结报告

RAGHAV S. NANDYAL
SITARA TECHNOLOGIES PVT. LTD.

Dear Raghav Nandyal:

一、总体发现

在本次 CMMI 高级成熟度评估中，主任评估师和 5 位 ATM 辛勤工作，举行了多场访谈和文档审查，认真仔细审核我们提交的资料。通过专业的判断，本次评估总共发现了 49 改进建议。改进建议分为工程管理、项目管理、支持、过程管理 4 类，其中，工程管理 10 条，项目管理 19 条，支持 7 条，过程管理 8 条以及 5 个全局发现结果。通过公司高层经理、EPG 过程改进小组、项目经理、QA、CM、OT 等过程改进中的重要角色研究讨论，一致认为主发现改进项与公司的实际情况高度符合，符合度为 95%。

二、经验教训

我们从工程管理、项目管理、支持、过程管理四个方面分别进行总结。

工程管理

将组织已有组件应用项目中时，需对这些复用组件进行简要的介绍，并提供获取方式及文档，以便开发人员可以快速地查找和使用这些已有组件，提高开发生产率。在后续的工作中，我们需要增加数据库相关的检查项，并严格执行该标准，强化数据库设计的评审，来降低数据库缺陷率。

在产品集成阶段报告中记录产品集成过程中发现的问题，出现问题的原因、解决人、计划解决时间、实际解决时间、解决方式等，明确问题是如何产生的以及解决人和解决时间，避免问题再次出现；在后续工作中，我们也会增加备选方案的数量，这样可以识别出最优方案，提高项目成功率；

在测试方面，我们将已发现的缺陷参照测试用例对系统功能进行复测，在缺陷全部修复的前提下，通过用例描述执行回归测试，确认修改过程中没有引入新的错误或导致其他代码产生错误，使得测试通过率需要达到 100%，从而提高我们的产品质量。

项目管理

在项目的开发过程中，除了技术层面的决策分析外，还需要进行其他方面的决策分析，如商业模式、市场分析、团队管理等，并在进行决策分析时，可以使用 SWOT

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分析、成本效益分析、决策树等分析方法辅助我们做出最佳的决策。

在后续项目估算时，明确项目需要投入的资源数量，因为资源明确后可以对已有的资源进行更合理的工作分配，可以降低成本。同时在编写项目计划时会把项目组成员的能力因素也考虑进去，这样可以更合理有效的安排工作，增加工作效率。

在项目开发中还应对各模块代码进行统计、分析，识别出功能点数和代码复杂度之间的关系，可以帮助我们识别出业务难度、更好的分配工作量。

其次收集客户满意度评价方面，需要拓展更多的方法和途径，我们将尝试通过 EPG、QA、MSG 成员参与收集客户评价方式，避免收集人员单一导致的结果误差；通过邮件、电话等非见面方式收集评价提高评价真实性；通过现场培训时收集非记名的评价结果，提高意见可信度；通过调研的多组不同评价，获得评价的平均值，提高评价数据的可信度。通过以上方法提高客户满意度数据质量，从而更准确的度量我们的商业目标。

支持

在质量把控工作方面，需要对不符合项的严重程度和分布状态进行汇总和量化分析，找出不符合项产生的规律，识别出可能存在的潜在改进机会，确认不符合项根源，制定具有针对性的改进措施，有利于监控不符合项。

在人才培养方面，需要快速适应市场变化，制定出符合公司战略发展的战略培训计划，不断提高员工的综合素质。也需要重视在计划执行过程中对其进行评估和调整，以便更好地利用培训资源。同时也需要制定相应人员免培训的标准，可以提高工作效率，免除重复性的培训，节省组织人员的时间和精力，可以降低企业的培训成本，增强员工满意度。

过程管理

在裁剪指南中增加迭代模型、敏捷模型等，让更多的项目组可以使用裁剪指南；在 EPG 月报中增加风险项的发生概率和影响程度。提高高层对风险信息的掌握；在试点计划、部署计划中增加选择该项目的理由，让参与动计划和过程部署计划的人员以及后续的项目组成员作参考；补充高层对 QPPO 预测性能的沟通情况记录，以确保高层能准确理解现状，提供资源支持和决策支撑。同时，定期对记录进行整理和归档，以便其他成员能进行参考和学习。

在建立过程性能基线时，使用 95% 置信区间确定上限下限值，替代均值加减 3 倍标准差建立上限下限值，可以使我们的基线值更准确，以便能更精确的度量我们的过程性能。

三、现实意义

1) 建立商业目标量化分析方法论：践行 CMMI5 标准帮助我们通过量化方式选定我们的商业目标，并能够使用数值清晰的度量我们商业目标，识别出影响商业目标达成的关键因素，预测出我们能够达成的合理的商业目标、过程性能目标及达成目



标的路径。

2) 持续提高组织活力：帮助我们建立了一套可量化度量的流程、标准、过程资产，基于这些流程和标准我们可以持续不断的改进我们的组织过程和项目，让组织更加注重过程管理和持续改进，注意方法论和工具，帮助组织提高工作效率和管理水平。

3) 提高产品质量：帮助我们建立完善质量保证计划、确保流程控制规范、进行内审等工作，建立缺陷管理机制，及时发现软件缺陷，并且使用量化方法分析和解决识别出的根本原因，提高缺陷管理效率，从而提高软件质量。

4) 提高风险管控能力：提高了关注项目风险和问题、有效地预防和解决问题，更加规范化和协同化的跨部门协作使得项目质量的控制更加有效和可靠。

四、改进措施

EPG 小组会将本次评估中发现的弱项和问题，汇总形成《过程改进建议表》，在 EPG 会议上分析讨论，评审相应改进建议，向 CMMI5 发起人汇报改进项及措施，确定改进的优先级，制定《过程改进计划》。任命相关的人员来处理对应的改进项，修改涉及到的标准过程文件和模板。在下次 EPG 会议上对修改后的文档进行评审，通过后发布新修改后的标准过程文件和模板，并通过配置人员更新到配置管理系统上的财富库中。

针对过程改进计划制定我们的行动计划、试点计划，CMMI5 发起人组织高层经理、EPG 组进行研讨改进实施注意事项，并向组织申请专项过程改进资金支持，同时发起人需积极推进和支持 EPG 改进工作，同时推进组织开发出符合过程改进目标的标准文档和培训材料，选用合适的机会进行改进试点，逐步推广至全公司。

EPG 小组需对整个改进过程进行监控，对涉及到的项目团队进行培训，对改进效果进行度量及量化分析，以便发现新的改进机会，继续提升公司的整体的过程能力，提高实现商业目标的可能性。

我在此授权并同意 SITARA Technologies 在 SITARA 的出版渠道上分享我们的评估成果，在 SITARA Technologies 认为合适的情况下宣传我们的评估成果。

安徽力瀚科技有限公司

发起人：汪正曦

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EXECUTIVE SESSION BRIEFING – SPONSOR FEEDBACK

RAGHAV S. NANDYAL
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Dear Raghav Nandyal:

Overall Findings:

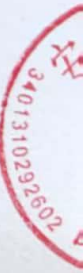
During the recent CMMI appraisal at our company, the lead appraiser and five ATMs worked diligently by conducting multiple interviews and carefully reviewing the documents we submitted. Through their professional judgment, a total of 49 improvement opportunities were identified. These opportunities were categorized into four types: engineering management, project management, support, and process management. Specifically, there were 10 opportunities for engineering management, 19 for project management, 7 for support, 8 for process management and 5 global findings. After conducting extensive research and discussions with key stakeholders in process improvement, such as senior managers, the EPG process improvement team, project managers, QA, CM, and OT, it was unanimously agreed that the main improvement opportunities were highly consistent with the company's actual situation, with a conformity rate of 95%.

Lesson Learned:

We have summarized our experience and lessons learned in four areas: engineering management, project management, support, and process management.

Engineering Management:

When applying existing components in a project, it is necessary to provide a brief introduction of these reusable components, along with access methods and documentation, so that developers can quickly find and use them, thereby improving development productivity. In future work, we need to increase inspection items related to databases and strictly adhere to the standard, strengthen the review of database design, in order to reduce the defect rate of databases. In the product integration phase report, issues discovered during the product integration process should be recorded, including the reasons for the issues, the responsible parties, planned and actual resolution times, and the resolution approach, to clearly understand how the problems arose and who resolved



them and when, in order to prevent the recurrence of these issues. In the future work, we will also increase the number of alternative solutions, so as to identify the optimal solution and improve the success rate of the project.

In terms of testing, we will retest the system functions against the test cases for the defects identified, and under the condition that all defects have been fixed, execute regression testing based on the test case description, to confirm that no new errors have been introduced during the modification process or caused errors in other code, so that the test pass rate can reach 100%, and thus improve the quality of our products.

2、Project management

In the development process of the project, in addition to the technical level decision analysis, other aspects of decision analysis, such as business model, market analysis, team management, etc., and in the decision analysis, we can use SWOT analysis, cost-benefit analysis, decision tree and other analysis methods to assist us in making the best decision. In the follow-up project estimation, the number of resources to be invested in the project will be clarified, because the resources can be clarified to make a more reasonable work allocation of the existing resources, which can reduce the cost. We also take into account the competency of the project team members when preparing the project plan, so that we can arrange the work more rationally and effectively and increase the efficiency.

In the project development, we should also conduct statistics and analysis of each module code to identify the relationship between function points and code complexity, which can help us identify the business difficulty and better allocate the workload.

Secondly, we need to expand more methods and ways to collect customer satisfaction evaluation. We will try to collect customer evaluation through the participation of EPG, QA and MSG members to avoid the error of result caused by single collector; collect evaluation through non-meeting way such as email and telephone to improve the authenticity of evaluation; collect non-nominal evaluation results during on-site training to improve the credibility of opinion; collect different evaluation by research of Multiple groups of different evaluations to obtain the average value of evaluations and improve the credibility of evaluation data. Through the above methods, we can improve the quality of customer satisfaction data, so that we can measure our business objectives more accurately.

3、Support

In terms of quality control work, we need to summarize and quantitatively analyze the severity and distribution status of non-conformities, find out the law of non-conformity generation, identify potential improvement opportunities that may exist, confirm the root cause of non-conformities, and develop targeted improvement measures that are conducive to monitoring non-conformities.

In terms of talent training, we need to quickly adapt to market changes, develop a strategic training plan in line with the company's strategic development, and continuously improve the overall quality of employees. It also needs to pay attention to the evaluation and adjustment of the plan during its implementation in order to make better use of training resources. It is also necessary to develop standards for the corresponding personnel to be waived from training, which can improve efficiency, eliminate repetitive training, save the time and energy of the organization's personnel, and can reduce the training costs of the company and enhance employee satisfaction.

4. Process Management

We will add iteration model and agile model to the tailoring guide, so that more project teams can use the tailoring guide; add the probability of occurrence and impact level of risk items in the EPG monthly report. We add the reasons for selecting this item in the pilot plan and deployment plan, so that the personnel involved in the moving plan and process deployment plan and the subsequent project team members can make reference to them; we add the records of senior management's communication on the predicted performance of QPPO to ensure that the senior management can accurately understand the current situation and provide resource support and decision support. At the same time, the records should be regularly organized and archived so that other members can refer to and learn from them.

When establishing the process performance baseline, we use 95% confidence interval to determine the upper and lower limit values, instead of the mean value plus or minus 3 times the standard deviation to establish the upper and lower limit values, which can make our baseline values more accurate so that we can measure our process performance more precisely.

evaluation

satisfactorily

Relevance

1) Establishing quantitative analysis methodology for business objectives: Practicing CMMI5 standard helps us to select our business objectives in a quantitative way, and be able to use numerical values to clearly measure our business objectives, identify the key factors affecting the achievement of business objectives, and predict the reasonable business objectives, process performance objectives and paths to achieve them.

2) Continuously improve organizational dynamics: Help us establish a set of quantifiable metrics of processes, standards, and process assets, based on which we can continuously improve our organizational processes and projects, allowing the organization to focus more on process management and continuous improvement, pay attention to methodologies and tools, and help the organization improve its efficiency and management.

3) Improve product quality: help us to establish and improve quality assurance plans, ensure process control specifications, conduct internal audits and other work, establish a defect management mechanism, timely detection of software defects, and use quantitative methods to analyze and solve the identified root causes, improve the efficiency of defect management, thereby improving software quality.

4) Improve risk control capability: improved attention to project risks and problems, effective prevention and problem solving, more standardized and collaborative cross-departmental collaboration makes the control of project quality more effective and reliable. IV. Improvement Measures

The EPG team will aggregate the weaknesses and problems found in this appraisal to form the Process Improvement Suggestion Form, analyze and discuss them in the EPG meeting, review the corresponding improvement proposals, report the status to the sponsor, determine the priority of improvement, and formulate the Process Improvement Plan. The related personnel are appointed to handle the corresponding improvement items and modify the standard process documents and templates involved. The revised documents will be reviewed at the next EPG meeting and the new revised standard process documents and templates will be released after they are approved and updated to the wealth library on the configuration management system through the configuration staff.

We will develop our action plan and pilot plan for the process improvement plan. The sponsor of CMMI5 will organize senior managers and EPG groups to discuss improvement

implementation considerations and apply for special process improvement funding support from the organization, while the sponsor needs to actively promote and support the EPG improvement work, and at the same time promote the organization to develop standard documents and training materials that meet the process improvement goals, select suitable opportunities for The EPG team is responsible for the entire improvement process.

The EPG team is required to monitor the entire improvement process, train the project teams involved, measure and quantitatively analyze the improvement results in order to identify new improvement opportunities, continue to improve the company's overall process capability, and increase the likelihood of achieving business goals.

I hereby authorize and give consent to SITARA Technologies to share our appraisal accomplishments on SITARA's publishing channels giving publicity to our appraisal accomplishment as SITARA Technologies deems it fit.

Anhui Lehand Technology Co., LTD.

Handwritten signature
2023.4.25



Wang Zhengxi (Sponsor)

April 25th, 2023

