北京泰和利通科技有限公司

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

通过 CMMI Level 5 范围界定的评估，我们公司对软件开发和项目管理流程进行了全面而细致的审查，采用了 CMMI V3.0（开发领域）标准。在此期间，进行了文档审查和面谈，并且 HMLA 和 ATM 在日常开发过程和管理中准确地识别了已知和潜在的问题。他们在评估期间提供了有针对性的改进建议，并进行了仔细的指导。我们特别感谢 HMLA，他们使用幽默风趣的例子帮助我们更好地理解各种流程中的弱点，并进行了多次面谈。同时，在基准评估中，评估团队除了软件工程流程外，还对我们的业务流程进行了全面审查，并在可选的执行者会议中使用 SPRUM-Systemic Process Review Using Measurements®（Raghavan S. Nandyal 的注册商标），提供了对"如何进行有效的后续绩效改进计划"的更深入见解。可选的执行者会议产生了非常有益的评估结果，将帮助组织在更多正在执行的项目中推广高成熟能力实践。通过与 HMLA 的深入讨论，我们获得了宝贵的建议和指导，这为公司未来的发展指明了方向。评估过程让我们进一步的深入审视了公司现行的 CMMI 高成熟度的实施现状。有了更为全面和深入的了解，发现了不少潜在的问题与改进空间。通过评估锻炼了我们的团队，提升了员工对标准化、规范化流程的认识和执行能力。在此次评估中，各位评估老师们从产品需求、设计、开发、测试、交付、决策分析、项目管理、项目资源的精细化管理、PPM 模型的引入、人才培训机制、编码规范等多个方面提出了宝贵的改进建议。公司高层、EPG 过程改进小组、项目经理、质量保证、以及配置管理等核心成员，经过对这些问题的深入追溯与研讨，达成了共识：这些建议与公司实际情况高度吻合，符合度达到 96%，我们将认真消化吸收评估结果，结合公司实际情况，制定具体的改进措施和计划，确保每一项建议都能得到有效落实。

这次 CMMI5 评估审核不仅是对公司研发能力和管理水平的全面检验，更是一次难得的学习和提升的机会。我们将以此为契机，不断总结经验、优化流程、提升能力，推动公司在追求卓越、实现持续发展的道路上迈出更加坚实的步伐。

二、经验教训

我们从工程过程、项目管理、支持过程、过程管理四个方面为切入点分别进行详细总结。

工程过程

在工程过程管理控制中，重点在设计编码方面，各位专家老师和评估老师给到了非常详细且落地的执行方案，例如：

在代码中使用的变量名称必须描述其用途，以提高代码的可读性、可维护性和测试性。

相同类型的变量声明必须全部放置在一个代码块中，以便更容易阅读和理解。

在详细设计中，应该对 UML 设计的类图进行详细设计，这样能够清晰明确系统中类、属性和方法之间的关系呈现，从而使得系统结构清晰可视化，使团队人员轻松的快速理解和维护系统。

建议在设计文档中加入针对数据抽取过程的可视化描述，将有助于提高系统的可维护性和管理性等。

在执行 CMMI 高成熟度评估的过程中，我们在工程过程中取得了显著的洞见和实践经验。对于代码的可读性、可维护性和测试性，我们认识到，在代码中使用的变量名称必须描述其用途，这样不仅能提升代码的可读性，使其他开发人员更容易理解代码逻辑，还能提高代码的可维护性，方便后续对代码进行修改和优化。同时，这也有助于提高代码的测试性，因为描述性的变量名称能使测试人员更容易理解测试需求和预期结果。针对代码结构的优化，这个有助于提升代码的可读性和可维护性，使代码结构更加清晰，便于团队成员阅读和理解。同时，这也符合代码规范的要求，有助于提高代码质量。在详细设计方面，我们应该重视 UML 设计的类图的设计，以清晰明确系统中类、属性和方法之间的关系。通过类图的可视化呈现，系统结构变得清晰易懂，团队成员可以更快地理解和维护系统。这不仅提高了开发效率，也降低了沟通成本。针对数据抽取过程的描述，有助于提升系统的可维护性和管理性，因为通过可视化描述，我们可以更直观地了解数据抽取的流程和方法，从而更方便地对系统进行维护和优化。

项目管理

针对建议在估算的过程中，由项目规模进而估算出工作量、周期和资源的过程缺少详细的记录和相关的假设条件等内容，仅记录了各项估算的结果，这可能不利于后期对估算的回溯。

在 CMMI 高成熟度评估过程中，我们发现当前在估算工作中存在显著的改进空间。特别是在由项目规模推导出工作量、周期和资源的过程中，缺少详尽的记录和相关的假设条件等内容。这种估算方式虽然记录了各项估算的结果，但缺乏足够的透明度和可追溯性，可能导致后期对估算的回溯变得困难。为了提升估算的准确性和可靠性，我们需要在未来的估算工作中加强记录和假设条件的梳理，确保每一步的推导都有明确的依据和解释。这样不仅能提高估算的精度，还能为项目管理和决策提供更有力的支持。针对这个建议，我们制定了详细的改进措施。

1、建立详细的估算记录机制：制定记录模板；记录估算步骤；注明假设条件：在记录中明确列出所有假设条件，并解释这些假设对估算结果的影响。

2、强化估算过程的可追溯性：标记关键节点：在估算过程中标记关键节点，如关键决策点、数据输入点等，以便后期回溯时能够快速定位到相关信息。使用版本控制：对估算记录进行版本控制，每次修改都记录修改内容和时间，确保估算过程的变更能够被追踪。

3、加强估算结果的审查和验证。设立审查机制：建立估算结果的审查机制，由专业人员对估算过程和结果进行审查，确保估算的准确性和合理性。验证假设条件：对估算过程中使用的假设条件进行验证，确保它们在实际操作中仍然有效。

4、提升估算人员的专业能力。提供培训：为估算人员提供相关的培训，提高他们的估算能力和对估算过程的理解。分享经验：定期组织估算人员分享经验，交流估算方法和技巧，促进团队整体水平的提升。

5、建立持续改进的文化：鼓励反馈；定期回顾。

支持过程

首先，在质量保证方面，针对度量单位定义宽泛或不准确的问题，我们深刻体会到这对项目度量和评估的负面影响。在过去的工作中，我曾遇到过使用如“人天”这样模糊的度量单位，导致在“总体增加和总体减少”的计算中出现了较大的偏差，使得度量结果失去了实际的指导意义。准确的度量单位是确保度量结果有效性和可靠性的基础。在今后的工作中，将更加注重度量单位的选择和定义，确保它们能够准确反映实际工作的量和质。同时，我们也会加强团队对度量单位的理解和认识，避免因为理解偏差而导致的度量误差。此外，我们还将积极探索更加科学、合理的度量方法，结合项目的实际情况，制定合适的度量指标和体系，以更准确地反映项目的进展和效果。通过不断的实践和改进，我相信我们能够克服度量单位不准确的问题，提高项目度量的准确性和有效性，为项目的成功实施提供有力的支持。

其次，在配置管理工作中，我们近期识别出一个重要的弱项，即测试用例文档与测试用例审查文件相互独立且内容重叠。这种设置不仅导致了信息冗余，还增加了配置管理的复杂性，使得我们在存储、维护和管理这些文档时投入了过多的工作。我们认识到这种分散化的管理方式不仅效率低下，而且容易引发版本不一致、信息丢失等风险。合并测试用例文档与审查内容至一个综合文档中，将极大地简化配置管理流程，提高信息管理的效率和准确性。通过这次经验的总结，我们深刻体会到配置管理工作的重要性和复杂性。只有不断优化管理流程，提高管理效率，才能确保项目的顺利进行和高质量交付。我将以此为契机，持续改进配置管理工作，为团队和公司创造更大的价值。

另外，在风险管理方面，针对风险评估在决策前必须全面考虑影响关键业务目标平衡因素这一弱项，我深有体会。在过往的项目实践中，我们往往过于关注某一方面的风险，而忽视了其他同样重要的因素，导致决策不够全面和准确。这不仅可能影响项目的顺利推进，更可能对关键业务目标如盈利能力产生负面影响。风险评估是一个系统性、综合性的过程，必须全面考虑各种可能影响业务目标的因素。这包括但不限于市场风险、技术风险、运营风险等，并且需要权衡各因素之间的关系，确保决策能够平衡各方面的利益和需求。通过这次经验的总结，我司深刻体会到风险评估在项目管理中的重要性。只有全面、准确地评估风险，才能做出明智的决策，确保项目的成功实施和业务目标的顺利实现。我将以此为契机，不断提升自己的风险管理能力，为公司的发展贡献更大的力量。

过程管理

根据过程管理方面提出的一些改进建议，我们也是进行了详细的讨论和分析，制定了相应的措施。比如过程管理方面提出了一些针对“盈利能力”作为关键业务目标的分析中，尽管我们已经对过去三年的数据进行了梳理，但在影响利润率的依赖关系上，我们的定义仍然不够完整。许多潜在的因素与最终利润结果之间的直接相关性并未得到充分的揭示和验证，这使得我们在制定提升盈利能力的策略时，可能忽略了某些重要的变量，导致决策不够精准和全面。

通过这次评审，我们也是深刻理解了数据分析的深度和广度对于准确把握业务目标至关重要。我们不能仅仅满足于表面的数据呈现，更要深入挖掘数据背后的逻辑和关系，尤其是那些看似不直接相关但实则影响深远的因素。同时，我们也需要不断更新和优化数据分析模型，以适应市场环境的不断变化和业务需求的持续演进。

后续，我司将致力于加强数据分析和业务逻辑之间的融合，通过更深入的研究和探索，完善影响盈利能力的依赖关系定义。同时，我门也会积极与团队成员分享这次的经验教训，共同提升我们在数据分析方面的能力和水平，为公司的盈利增长提供更有力的支持。

三、现实意义

实施 CMMI5 高成熟能力模型带来的现实意义非常显著。

1、实施 CMMI5 高成熟能力模型有助于企业在软件研发和管理领域达到业界领先水平。这代表着企业已经建立了一套成熟、高效、规范的软件开发和工程管理流程，能够在复杂多变的市场环境中迅速应对各种挑战，提升企业的竞争力和市场占有率。

2、CMMI5 的实施推动了企业对软件开发过程的持续改进和量化管理。通过对软件开发过程进行精细化的控制和度量，企业能够及时发现并解决开发过程中的瓶颈和问题，提升开发效率和质量。同时，量化管理使得企业能够对开发进度、成本和质量进行更加准确的预测和控制，为企业的决策提供有力支持。

3、CMMI5 强调过程自我修正能力的提高，有助于企业降低软件开发风险。通过不断优化和完善软件开发过程，企业能够减少错误和缺陷的产生，提高产品的稳定性和可靠性。这不仅有助于提升客户满意度，还能够为企业节省大量的维护成本和修复成本。

4、CMMI5 的实施推动了自动化程序在软件开发中的应用。基于规则和量化分析的自动化程序可以大大提高软件开发的效率，减少人为失误，使得软件开发过程更加稳定、可控。这不仅有助于提升企业的研发能力，还能够为企业带来更高的经济效益。

5、CMMI5 适用于大规模、高质量、复杂度高的软件开发项目。通过实施 CMMI5，企业能够确保软件项目的顺利进行和高质量交付，满足客户的期望和需求。这不仅有助于提升企业的市场声誉和品牌形象，还能够为企业带来更多的商业机会和合作伙伴。

实施 CMMI5 高成熟能力模型对于我们公司来说具有深远的现实意义。它不仅有助于提升我司的软件研发和管理水平，还能够为我司带来更高的竞争力和商业利益。因此，我们会积极拥抱 CMMI5，不断推动自身的改进和发展。

四、改进措施

在本次评估后，EPG 团队将与项目人员紧密合作，共同针对评估中提出的建议进行深入讨论与识别。通过多次会议交流，我们将形成一份详尽的《差距分析报告》，这份报告将成为我们现阶段组织过程改进的核心依据。基于这份报告，我们将精心制定《过程改进计划》，其中将明确改进活动的每一步骤、时间安排、参与人员以及实施目标等关键信息。为确保改进工作的顺利进行，公司高层将与 EPG 成员共同讨论改进过程中可能出现的注意事项、潜在风险及障碍，并承诺提供充分的人、财、物等资源支持。我们将通过制定规范、调配资源以及迭代生产工具等手段，及时解决这些问题，为改进工作创造有利条件。在改进过程中，相关人员将保持高度的配合度。EPG 团队将根据发现的问题和分析报告，进行深入的根因分析，寻找有效的改进措施。随后，我们将选取合适的试点项目，对改进措施进行实际尝试。在试点数据通过假设检验后，我们将进一步推广部署这些改进措施，以期实现更大的效益提升。

在 EPG 团队实施改进的过程中，我们始终对改进流程保持全面的监控，详细记录每一步的效果，深入分析所收集到的度量数据。我们精心挑选合适的模型进行量化分析，构建预测模型和趋势分析，旨在精准预测软件开发过程和产品的质量走向。在项目实施期间，我们不断优化项目开发流程，努力提升工作效率，确保项目的顺利进行。针对代码规范性问题，EPG 团队进行了持续的改进工作，深入探索影响因子，评估并调整度量项，不断优化基线与模型，以期提升项目的整体水平。此次的评估和日常实践，让我们对 CMMI5 有了更为深刻的理解，同时也让我们认识到自身的不足之处。实施 CMMI5 的过程就是一个不断追求完善、不断优化的旅程，我们始终秉持着不断进取、永不停歇的精神。通过培训提升团队技能、制定标准化流程、强化监控机制、加强内部沟通以及持续改进等多种方式，我们致力于提升组织的能力与成熟度，确保我们能够适应不断变化的软件发展环境和市场需求。我们对人员的技能要求也在日益提高，因为只有不断提升自身能力，才能更好地满足客户的需求，提高开发效率，从而在激烈的市场竞争中立于不败之地。

提升过程管理水平，不仅能够增强客户满意度，还能提高我们的开发效率，使我们能够更好地适应市场环境，实现公司的长期愿景。因此，我们将把 CMMI5 作为提升产品质量和管理能力的重要工具，持续推动其在公司内的应用。

最后，我们衷心感谢评估师和各位 ATM 老师的辛勤付出和专业指导。感谢评估组提出的发现，我们很认同这些发现，感谢评估师和评估团队给出的宝贵意见。您们宝贵的意见为公司团队指明了前进的方向，为公司未来的发展奠定了坚实的基础。这些发现对于我们提高软件开发效率和质量，有很大帮助；后续我们会针对各项发现，认真落实改进，通过改进助力研发水平提升。持续提高软件开发效率和质量，提高客户满意，实现可持续发展。

我在此授权并同意您本人和 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。

北京泰和利通科技有限公司

发起人：

2024 年 4 月 14 日

EXECUTIVE SESSION BRIEFING - SPONSOR FEEDBACK

Overall findings

Through the CMMI Level 5 scoped appraisal, our company underwent a comprehensive and meticulous examination of our software development and project management processes using the CMMI V3.0 (Development Domain). During this period, document reviews and interviews were conducted, and the HMLA and ATMs accurately identified known and potential issues in our daily development processes and management. They provide targeted improvement suggestions and careful guidance during the appraisal period. We especially appreciate the HMLA who used humorous and witty examples to help us better understand weaknesses in various processes and held multiple interviews. At the same time, the appraisal team conducted a comprehensive review of our business processes besides the software engineering process, and offered deeper insights into 'how to pursue an effective follow up performance improvement program' in an optional executive session within the Benchmark Appraisal using SPRUM-Systemic Process Review Using Measurements®, which is a registered trademark of Raghavan S. Nandyal. The optional executive session output has resulted in a highly beneficial appraisal output which will help the organization roll-out the high maturity practices across a larger pool of projects in execution. Through in-depth discussions with the HMLA, we have gained valuable advice and guidance, which have set the direction for the company's future development.

The appraisal process allows us to further examine the current implementation status of CMMI-HM in the company. With a more comprehensive and in-depth understanding, we have identified many potential issues and areas for improvement. The appraisal has also trained our team and enhanced employees' awareness and execution ability of standardized and regulated processes. In this appraisal, the HMLA have provided valuable improvement suggestions from various aspects such as product requirements, design, development, testing, delivery, decision analysis, project management, precise management of project resources, introduction of PPM models, talent training mechanisms, and coding standards. After thorough investigation and discussion among core members such as company executives, EPG process improvement team, project managers, quality assurance, and configuration management, we have reached a consensus: these suggestions are highly compatible with the actual situation of the company, with a conformity rate of 96%. We will diligently digest and absorb the appraisal results, formulate specific improvement measures and plans based on the actual situation of the company, and ensure that each suggestion is effectively implemented. This CMMI Level 5 appraisal is not only a comprehensive examination of the company's research and development capabilities and management level but also a rare opportunity for learning and improvement. We will take this opportunity to continuously summarize experiences, optimize processes, enhance capabilities, and propel the company forward on the path to excellence and sustainable development with more solid steps.

Lessons Learned

We have conducted detailed summaries from four perspectives: engineering processes, project management, support processes, and process management.

Engineering management

In the engineering process management control, the focus is on design and coding. Detailed and actionable execution plans are provided by the ATMs and HMLA, for example:

Variable names used in the code must describe their purpose to improve code readability, maintainability, and testability. Declarations of variables of the same type must all be placed in one code block for easier reading and understanding. In detailed design, detailed design of UML class diagrams should be conducted, which can clearly present the relationships between classes, attributes, and methods in the system, making the system structure clear and visualized, and enabling team members to easily understand and maintain the system. It is recommended to include visual descriptions of data extraction processes in the design document, which will help improve the maintainability and manageability of the system.

During the execution of CMMI-HM appraisal, we have gained significant insights and practical experience in engineering processes. Regarding code readability, maintainability, and testability, we recognize that using descriptive variable names in the code to describe their purpose not only enhances code readability, making it easier for other developers to understand the code logic but also improves code maintainability, facilitating subsequent code modifications and optimizations. Additionally, this also helps improve code testability because descriptive variable names make it easier for testers to understand testing requirements and expected results. Optimizing the code structure contributes to improving code readability and maintainability, making the code structure clearer and easier for team members to read and understand. This also aligns with code standards requirements and helps improve code quality. In terms of detailed design, we should emphasize the design of UML class diagrams to clearly define the relationships between classes, attributes, and methods in the system. Through the visualization of class diagrams, the system structure becomes clear and understandable, enabling team members to understand and maintain the system more quickly, thereby improving development efficiency and reducing communication costs. Describing the data extraction process helps improve the maintainability and manageability of the system because through visual descriptions, we can intuitively understand the data extraction process and methods, making it more convenient to maintain and optimize the system. Describing the data extraction process helps improve the maintainability and manageability of the system because through visual descriptions, we can intuitively understand the data extraction process and methods, making it more convenient to maintain and optimize the system.

Project management

In response to the suggestion regarding the estimation process, where the process of deriving workload, duration, and resources from project scale lacks detailed records and related assumptions, only the estimation results are documented, which may not be conducive to retrospective analysis of the estimations. During the CMMI-HM appraisal process, significant room for improvement in the estimation work was identified. Particularly, in the process of deriving workload, duration, and resources from project scale, there is a lack of detailed records and related assumptions. Although this estimation method records the results of each estimation, it lacks sufficient transparency and traceability, which may make it difficult to retrospectively analyze the estimations. To enhance the accuracy and reliability of estimations, we need to strengthen the documentation and clarification of assumptions in future estimation work, ensuring that each derivation step has clear justification and explanation. This will not only improve the accuracy of estimations but also provide stronger support for project management and decision-making. In response to this suggestion, we have formulated detailed improvement measures: Establish a detailed estimation recording mechanism: Develop recording templates; document estimation steps; specify assumption conditions: Clearly list all assumption conditions in the record and explain the impact of these assumptions on the estimation results. Strengthen the traceability of the estimation process: Mark key milestones: Mark key milestones in the estimation process, such as critical decision points, data input points, etc., so that relevant information can be quickly located during retrospective analysis. Use version control: Implement version control for estimation records, recording modification details and timestamps with each change, ensuring that changes in the estimation process can be traced. Enhance review and validation of estimation results. Establish review mechanisms: Establish a review mechanism for estimation results, with professional personnel reviewing the estimation process and results to ensure accuracy and reasonableness. Validate assumption conditions: Verify the assumption conditions used in the estimation process to ensure their continued validity in practical operations. Improve the professional capabilities of estimation personnel. Provide training: Provide relevant training for estimation personnel to enhance their estimation abilities and understanding of the estimation process. Share experiences: Organize regular sharing sessions for estimation personnel to exchange experiences, discuss estimation methods and techniques, and promote overall team competence. Establish a culture of continuous improvement: Encourage feedback; conduct regular reviews.

Support

Firstly, in terms of quality assurance, regarding the issue of loosely defined or inaccurate measurement units, we deeply recognize the negative impact this has on project metrics and appraisal. In past work, I encountered the use of vague measurement units such as "person-days," leading to significant deviations in calculations of "overall increase" and "overall decrease," rendering the measurement results devoid of practical guidance. Accurate measurement units form the basis for ensuring the effectiveness and reliability of measurements. In future work, greater emphasis will be placed on the selection and definition of measurement units to ensure they accurately reflect the quantity and quality of actual work. Additionally, we will enhance the team's understanding and awareness of measurement units to avoid measurement errors resulting from misunderstanding. Furthermore, we will actively explore more scientific and rational measurement methods, combined with the actual project situation, to develop appropriate measurement indicators and systems to more accurately reflect the project's progress and effects. Through continuous practice and improvement, I believe we can overcome the problem of inaccurate measurement units, improve the accuracy and effectiveness of project measurements, and provide strong support for the successful implementation of projects.

Secondly, in configuration management work, we recently identified an important weakness, namely the independence and overlap between the test case document and the test case review document. This setup not only leads to information redundancy but also increases the complexity of configuration management, resulting in excessive effort in storing, maintaining, and managing these documents. We recognize that this decentralized management approach is not only inefficient but also prone to risks such as inconsistent versions and information loss. Merging the test case document and review content into a comprehensive document will greatly simplify the configuration management process and improve the efficiency and accuracy of information management. Through the summary of this experience, we deeply understand the importance and complexity of configuration management work. Only by continuously optimizing management processes and improving management efficiency can we ensure the smooth progress and high-quality delivery of projects. I will take this opportunity to continuously improve configuration management work and create greater value for the team and the company. Additionally, in risk management, regarding the weakness that risk appraisal must comprehensively consider balancing factors affecting key business objectives before making decisions, I have a deep understanding. In past project practices, we often focused too much on certain aspects of risk while neglecting other equally important factors, resulting in decisions that were not comprehensive and accurate enough. This may not only affect the smooth progress of the project but also have a negative impact on key business objectives such as profitability. Risk appraisal is a systematic and comprehensive process that must comprehensively consider various factors that may affect business objectives. This includes but is not limited to market risks, technical risks, operational risks, etc., and requires balancing the relationships between various factors to ensure that decisions can balance the interests and needs of all parties. Through the summary of this experience, our company deeply understands the importance of risk appraisal in project management. Only through comprehensive and accurate risk appraisal can wise decisions be made to ensure the successful implementation of projects and the smooth realization of business objectives. I will take this opportunity to continuously enhance my risk management capabilities and contribute more to the company's development.

Process Management

Based on the improvement suggestions in process management, detailed discussions and analyses have been conducted, and corresponding measures have been formulated. For example, regarding the analysis of "profitability" as a key business objective, although we have reviewed the data from the past three years, our definition of the dependencies affecting profit margins is still incomplete. Many potential factors' direct correlations with the final profit outcome have not been fully revealed and validated, potentially leading us to overlook certain important variables when formulating strategies to improve profitability, resulting in decisions that are not precise and comprehensive enough.

Through this review, we have also deeply understood the importance of the depth and breadth of data analysis in accurately grasping business objectives. We cannot simply rely on surface-level data presentations but must delve deeper into the logic and relationships behind the data, especially those seemingly unrelated but profoundly impactful factors. Additionally, we need to continuously update and optimize data analysis models to adapt to the constantly changing market environment and the ongoing evolution of business requirements.

In the future, our company will focus on strengthening the integration between data analysis and business logic. Through further research and exploration, we will refine the definition of dependencies affecting profitability. At the same time, we will actively share the lessons learned from this experience with team members, collectively enhancing our capabilities and proficiency in data analysis, and providing stronger support for the company's profit growth.

Relevance

The implementation of the CMMI5 high maturity capability model brings significant practical significance. The implementation of the CMMI5 high maturity capability model helps the company achieve industry-leading levels in software development and management. This means that the company has established a mature, efficient, and standardized software development and engineering management process, enabling it to quickly respond to various challenges in the complex and volatile market environment, thus enhancing the company's competitiveness and market share. The implementation of CMMI5 promotes continuous improvement and quantitative management of the software development process within the company. Through fine-grained control and measurement of the software development process, the company can timely identify and address bottlenecks and issues in the development process, thereby improving development efficiency and quality. At the same time, quantitative management enables the company to make more accurate predictions and controls over development progress, costs, and quality, providing strong support for the company's decision-making. CMMI5 emphasizes the improvement of process self-correction ability, which helps the company reduce software development risks. By continuously optimizing and improving the software development process, the company can reduce the occurrence of errors and defects, improve product stability and reliability. This not only helps improve customer satisfaction but also saves the company a considerable amount of maintenance and repair costs. The implementation of CMMI5 promotes the application of automated procedures in software development. Automated procedures based on rules and quantitative analysis can greatly improve the efficiency of software development, reduce human errors, and make the software development process more stable and controllable. This not only helps improve the company's research and development capabilities but also brings higher economic benefits to the company. CMMI5 is suitable for large-scale, high-quality, and high-complexity software development projects. By implementing CMMI5, the company can ensure the smooth progress and high-quality delivery of software projects, meeting customer expectations and requirements. This not only helps enhance the company's market reputation and brand image but also brings more business opportunities and partnerships to the company. The implementation of the CMMI5 high maturity capability model has profound practical significance for our company. It not only helps improve our company's software development and management capabilities but also brings higher competitiveness and business benefits to our company. Therefore, we will actively embrace CMMI5 and continuously promote our own improvement and development.

Improvement measures

After this appraisal, the EPG team will closely collaborate with project personnel to conduct in-depth discussions and identification of the recommendations raised during the appraisal. Through multiple meetings and exchanges, a comprehensive "Gap Analysis Report" will be formulated, which will serve as the core basis for our current organizational process improvement. Based on this report, we will meticulously develop a "Process Improvement Plan," which will specify key information such as each step of improvement activities, scheduling, participants, and implementation goals. To ensure the smooth progress of improvement work, senior management will discuss potential considerations, risks, and obstacles during the improvement process with EPG members, and commit to providing full support in terms of human, financial, and material resources. We will address these issues promptly through standardization, resource allocation, and iterative production tool deployment, creating favorable conditions for improvement work. Throughout the improvement process, relevant personnel will maintain a high level of cooperation. The EPG team will conduct in-depth root cause analysis based on identified issues and analysis reports, seeking effective improvement measures. Subsequently, we will select suitable pilot projects to implement improvement measures for practical experimentation. After the pilot data pass hypothesis testing, we will further deploy these improvement measures to achieve greater benefits.

During the implementation of improvement by the EPG team, we consistently maintain

comprehensive monitoring of the improvement process, meticulously record the effects of each step, and conduct in-depth analysis of the collected measurement data. We carefully select appropriate models for quantitative analysis, construct predictive models and trend analysis, aiming to accurately predict the direction of software development processes and product quality. Throughout the project implementation, we continuously optimize the project development process, strive to improve work efficiency, and ensure the smooth progress of projects. Addressing issues regarding code standardization, the EPG team continuously engages in improvement work, thoroughly explores influencing factors, adjusts measurement items, and optimizes baselines and models to enhance the overall project level. This appraisal and our daily practices have provided us with a deeper understanding of CMMI5 and also made us aware of our shortcomings. The implementation of CMMI5 is an ongoing journey of continuous improvement and optimization, and we always uphold the spirit of continuous progress and never-ending pursuit. Through training to enhance team skills, establishment of standardized processes, strengthening monitoring mechanisms, enhancing internal communication, and continuous improvement, we are committed to enhancing the organization's capabilities and maturity, ensuring that we can adapt to the ever-changing software development environment and market demands. Our demands for personnel skills are also increasing day by day because only by continuously improving our own capabilities can we better meet customer needs, improve development efficiency, and maintain a competitive edge in the fierce market competition. Enhancing process management capabilities not only enhances customer satisfaction but also improves our development efficiency, enabling us to better adapt to the market environment and achieve the company's long-term vision. Therefore, we will regard CMMI5 as an important tool for improving product quality and management capabilities and continuously promote its application within the company.

Finally, we sincerely thank the HMLA and appraisal team for their hard work and professional guidance. We fully acknowledge these findings. Thanks to the valuable insights provided by the HMLA and the appraisal team, which have pointed the way forward for the company team and laid a solid foundation for the company's future development. These findings are of great help to us in improving software development efficiency and quality; we will earnestly implement improvements based on these findings and use them to enhance research and development capabilities. Continuous improvement of software development efficiency and quality, increasing customer satisfaction, and achieving sustainable development.

I hereby authorize and agree for you and SITARA Technologies to share our appraisal results on SITARA's publishing channels and promote our appraisal results as deemed appropriate by SITARA Technologies.

Beijing Techinter CO., LTD

Sponsor:

April 14, 2024