

**CMMI Level 5 SCAMPI Class A Review Feedback**

First of all, I am very grateful to the Certified High Maturity Lead Appraiser Mr. Raghav Nandyal and the appraisal team for their hard work all these days. Through the appraisal and training, we have benefited a lot. We passed CMMI Level 5 for the first time in July 2014. In recent years, we were in the product development process, with strict compliance and implementation of CMMI 5 level norms and requirements. Through the collection and analysis of data, timely detection of project and product development process problems, we improved our product quality, reduced R & D costs significantly, but also greatly improved customer satisfaction.

Through this CMMI re-appraisal, the teacher and appraiser, Mr. Nandyal also helped us find out what we need to improve and optimize in our organizational definitions and project execution process:

- ❖ **We should be more concerned about the ability to improve the organization's self-improvement.**
  - We should pay more attention to the effectiveness of the measurement of work deviations, schedule deviations, quality, etc., and continuously improve the professional level.
  - Tracking and analysis of trends in annual data frequently (semiannual or quarterly).
  - When building organizational-level baselines and PPMs, to base our PPBs on more project features such as project difficulty, project type, complexity and so on.
- ❖ **For project monitoring, we need to focus not only on the achievement of the overall objectives, but also need to focus more closely on and monitor the dynamic measurement data and dynamically adjust the work plan.**
  - Need to continuously collect and track project data, EPG, QA should be timely access to different projects, different stages of the project performance data information, and project synchronization review, to guide the project.
  - EPG and QA should be updated once every six months or every quarter to organize PPB baseline data and PPM models to more effectively and realistically guide project practice.
  - Project managers or project members need real-time proactive reporting of project data.
  - During the project monitoring process, the workload deviation and schedule deviation should be paid in real time.
- ❖ **We should be more concerned about the model of the improvement and adjustment, for the measurement items, we should make it more accurate.**
  - Improve the estimation of the size of the demand, using function point and the corresponding function points for accuracy, completeness, consistency, testability, traceability or complexity, clarity, difficulty to estimate the demand.
  - The size of the code is estimated to include the number of classes, the size of the class, the number of lines of the class, the number of methods, and so on.
  - The measurement information of the project should reflect the deviation information of the project.
  - Consider project quality assurance costs.  $Quality Assurance Cost = (Training Cost + Review Cost + Test Cost) / Total Cost$ .
- ❖ **We need to pay more attention to quality.**
  - For object-oriented programming, it should be more in line with object-oriented thinking, following the SOLID principle (Single responsibility principle, Open/closed principle, Liskov substitution principle, Interface segregation principle, Dependency inversion principle), control the number of lines of code.
  - At all stages of coding, unit testing, integration testing, system and acceptance testing, both the forecast and the actual defect density must be known, and the coverage of each stage must be 100%, and the end of each phase should be zero.
- ❖ **In the cost estimate, we should add more dimensions.**
  - Estimates of individual support and measurement by project support, quality assurance, etc.
  - Increased rework cost estimates.  $Rework Cost = Rework Workload / Total Workload$ .

High maturity is a process of continuous improvement, and we will continue to improve our professionalism by continually improving the deficiencies outlined above. Thanks again to Mr. Raghav Nandyal for his hard work.

Director, Yan Peng  
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### CMMI Level 5 SCAMPI Class A 评审反馈

首先，非常感谢评审老师 Raghav Nandyal 先生和评审团队这些天的辛苦付出。通过评审和培训，我们受益颇多。我们于 2014 年 7 月首次通过 CMMI 5 级。这几年，我们在产品研发过程中，严格遵守和执行 CMMI 5 级的规范和要求。通过收集和分析数据，及时发现项目和产品开发过程中的问题，对我们提高产品质量、降低研发成本帮助非常大，也极大提高了客户满意度。

通过此次 CMMI 复审，老师也帮助我们发现了我们组织定义和项目执行过程中存在一些需要改进和优化的地方：

- ❖ **我们应更关注完善组织自我提升的能力。**
  - 我们应该更加关注工作量偏差、进度偏差、质量等计量的有效性，不断提升专业水平。
  - 对年度数据（或半年、季度）进行横向跟踪和分析。
  - 建立组织级基线和 PPM 的时候，基于更多项目特征，如项目难易程度、项目类型等。
- ❖ **对于项目监控，我们不仅需要关注总体目标的达成，还需要更关注和监控动态度量数据，动态调整工作计划。**
  - 需要持续收集和跟踪项目数据，EPG、QA 应及时获取到不同项目、项目不同阶段的性能数据信息，与项目同步审查、指导项目。
  - EPG 和 QA 要每半年或者每季度更新一次组织 PPB 基线数据和 PPM 模型，以更加有效和实时的指导项目实践。
  - 项目经理或者项目成员需要实时主动上报项目数据。
  - 项目监控过程中，应实时关注工作量偏差、进度偏差。
- ❖ **我们应该更关注模型的完善和调整，对于度量项，我们应该使其更为精准。**
  - 改进需求大小的估计方式，使用功能点及对应功能点的准确性、完成性、一致性、可测试性、可追溯性或者复杂性、明确性、困难度来对需求进行估计。
  - 代码规模估计加入类的数量、类的规模、类的代码行数、方法数等度量项目。
  - 项目的度量信息中，应当能体现出项目的偏差信息。
  - 要考虑项目质量保障成本。质量保障成本 = (培训成本+评审成本+测试成本) / 总成本。
- ❖ **我们需要更加关注质量。**
  - 对于面向对象编程，应使得更符合面向对象的思想，遵从 SOLID 原则（单一功能原则、开闭原则、里氏替换原则、接口隔离原则、依赖反转原则），控制类的代码行数。
  - 在编码、单元测试、集成测试、系统及验收测试的所有阶段都必须同时知道预测和实际缺陷密度，每个阶段测试覆盖率必须为 100%，每个阶段结束都应做到零遗留缺陷。
- ❖ **在成本估算中，我们应该增加更多的维度。**
  - 将项目支持、质量保证等估算单独统计和度量。
  - 增加返工成本估计。返工成本 = 返工工作量 / 总工作量。

高成熟度是一个持续改进的过程，我们将会对上述所列出的不足不断改进，不断提升我们的专业水平。再次感谢 Raghav Nandyal 先生这几天的辛勤劳动。

