CMMI 5 Appraisal Summary

From July 22 to July 29, Certified High Maturity Lead Appraiser Mr.Raghav Nandyal, external ATM Shi Minghua and the company's internal ATMs Tian Pan, Wu Hao, Wang Dan, Zhao Qin and Wang Ming Fan conducted 8 days of appraisal based on CMMI-DEV1.3 model. Four sample projects were appraised and 28 staff at all levels participated in the appraisal. Some of the findings during the appraisal are:

Identified Strength:

1. As for quantitative management, the company made measurement objectives, collect data and analyze data.

2. Organizational process performance objective and actual values are improved year by year.

3. Various sub-process model were established to support prediction of quality and workload of each stage.

Identified Issues:

Project management: The tool used to manage project schedule was not appropriate and method used to estimate document size was not suitable.

Engineering Management: The code document had some weakness and coding did not follow code criteria.

Process Management: The system document has overheads. Some project members were not clear about the best situation to use process simulation. Some members lacked understanding of HM tools.

Support Roles: No rework statistics were done, root cause analysis rate was low, QA workload was too much and QA lacks experience.

Improvement Suggestions:

- It is recommended to use Project or similar project planning special tools to prepare and monitor project plans.

- More internal and external stakeholders should be involved in document size estimation. Document characteristics such as clarity and complexity should also be considered when estimating. It is recommended to refer to COCOMO (constructive cost model) to estimate.

- It is suggested to improve code standard, for example, one class of JAVA code should contain less than 200 lines of codes(the current standard is less than 1000 lines.) Cyclomatic complexity should less than 5 (current is 10), each line should be less than 80 characters. This can be easier to read and test. It is suggested to have a code statistics, including lines of code, number of classes and functions. In this way, it is easier to manage code.

- It is recommended to expand and strengthen the training of high maturity thinking and increase the training of Six Sigma. More root-cause analysis should be conducted in project management process. It should be also recorded and shared.

- It is suggested to streamline and integrate guidelines and procedures document. QA's checklist should be simplified so that it is better to read and understand.

As for Project measurement, it is recommended to include rework as a measurement item to analyze cost caused by rework. And to turn lag-indicator into lead indicator, which will help to understand the impact when some data are abnormal. It can also guide project to adjust in the later stage.

Above are some of the findings identified during appraisal which we will continuously improve.

Aostar Information Technology Co., Ltd
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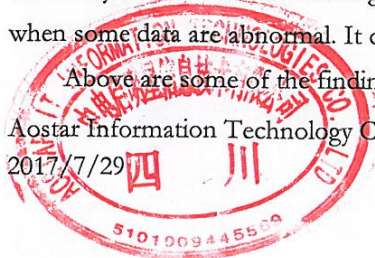
CMMI5 级评估总结

　　7 月 22 日至 7 月 29 日，由来自印度的主任评估师 Raghav Nandyal，外部评估员石明华以及公司内部的 5 位内审员（田攀、吴豪、王丹、赵琴、王明凡）组成的评估团队，依照 CMMI-DEV-v1.3 成熟度 5 级的标准，对公司开展为期 8 天的评估工作。

　　本次公司有 4 个项目参评，各级项目管理人员共 28 人参加评估。以下是评估期间的一些发现。

一、评估中发现的公司优势

1. 公司在量化管理上能够从度量目标制定、目标验证，度量数据的采集与监控、数据分析方面执行。

2. 组织过程性能目标和实际值均实现逐年提升。

3. 建立了各个子过程模型，支持各阶段质量和工作量的目标预测。

二、发现的问题

1. 项目管理方面存在未使用合适的项目进度管理工具、文档规模估算方式和方法不合理的问题。

2. 工程管理方面发现了代码规范文档的不足，且实际评估中发现部分项目并没有遵循公司代码规范的问题。

3. 过程管理方面存在体系文件臃肿，控制程序过多的问题、部分项目成员不清楚最合适的使用过程组模拟的时机，部分成员对高成熟度工具理解还存在不足。

4. 支持管理方面发现公司存在缺乏返工的工作量统计分析、问题的根因分析率不足、QA 工作量繁重且部分 QA 成员经验不足的问题。

三、改善建议

1. 建议使用 Project 或者类似的项目计划专用工具来编制和监控项目计划。

2. 文档规模估算人数应该增加项目内外关键干系人的参与，并将该文档特点加入到估算因素中，例如增加需求清晰度、设计复杂度等，可参考 COCOMO（构造性成本模型）的方式来进行估算。

3. 建议改善代码规范要求，提升代码编写复杂度要求，例如 JAVA 代码开发中应要求每个类不超过 200 行（目前文件中定义不超过 1000 行），圈复杂度不超过 5（目前为 10），每行不超过 80 个字符等，提升代码的易读性和易测试性。增加代码在代码行、类和方法的个数等统计信息，易于对代码规模的了解，且利于代码管理。

4. 建议扩大和加强高成熟度思想的培训，增加六西格玛的培训。项目管理过程中遇到的问题应该更多的进行根因分析，并予以记录和分享经验。

5. 精简和融合方针和程序定义文件、精简 QA 的工作检查项，便于员工的阅读、理解和执行。

6. 项目度量方面建议增加有关返工工作量的度量项，以便分析因返工造成的人力、成本损失。同时建议运用可视化技术，设立有关度量指标，当发现某一阶段的度量数据有问题时，可看到其对整个范围的影响、当前水平及接下来的工作，更好为当前状态做出提醒，知道接下来如何控制。

　　以上是评估期间的一些发现。总结如上。

四川中电启明星信息技术有限公司
2017 年 7 月 28 日