Evaluasi kemampuan organisasi dalam pengembangan perangkat lunak secara berkelanjutan berdasarkan kerangka kerja CMMI-Dev Continuous: Studi kasus DMWSoftware = Evaluation of organization's capability in software development based on CMMI-Dev Continuous framework: A case study of DMWSoftware

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Abstrak

[Sekarang ini, persaingan pada industri perangkat lunak di Indonesia semakin bertambah. Untuk dapat berhasil dalam persaingan tersebut, salah satu elemen penting adalah kualitas perangkat lunak yang dihasilkan. Kualitas perangkat lunak dipengaruhi oleh proses perangkat lunak yang diterapkan. Oleh karena itu, DMWSoftware sebagai perusahaan pengembang perangkat lunak ingin meningkatkan kualitas melalui peningkatan proses yang diterapkannya, secara khusus dari craftsmanship menjadi engineering. Hal ini agar perusahaan dapat menghasilkan perangkat lunak berkualitas untuk projek skala kecil maupun besar.

Peningkatan proses perangkat lunak dilakukan dengan kerangka kerja CMMI-Dev (Capability Maturity Model Integration for Development) continuous. Pertama-tama, evaluasi dilakukan untuk mengetahui tingkat kapabilitas dari beberapa daerah proses (process area/PA) dalam kerangka kerja CMMI-Dev. Penentuan PA dilakukan dengan CMMI roadmap, sementara evaluasi dilakukan dengan metode SCAMPI-C (Standar CMMI Appraisal Method for Process Improvement) dan alat bantu PST (PIID and SCAMPI Tools). Setelah itu, dilakukan analisis diagram Ishikawa untuk mengidentifikasi akar masalah dalam mencapai tingkat kapabilitas satu, yang kemudian diprioritaskan menggunakan diagram Pareto. Rekomendasi diberikan untuk menyelesaikan akar masalah utama, dan dianalisis dampaknya apabila rekomendasi diterapkan. Rekomendasi kemudian divalidasi kepada perusahaan untuk mengetahui apakah rekomendasi dapat dilakukan untuk meningkatkan proses perangkat lunak perusahaan.

Berdasarkan CMMI roadmap, diperoleh lima PA yang sesuai, yaitu requirement management (REQM), process and product quality assurances (PPQA), configuration management (CM), project planning (PP), dan project monitoring and control (PMC). Dengan diagram Ishikawa dan diagram Pareto, diperoleh lima akar masalah utama, yaitu standard operating procedure (SOP) tidak tersedia, sumber daya manusia (SDM) tidak tersedia, dokumentasi tidak dilakukan secara lengkap, proses tidak lengkap, dan proses yang tidak baku. Rekomendasi diberikan terkait kelima permasalahan pada kelima PA. Dampak dari penerapan rekomendasi adalah perusahaan dapat mengatasi 75% hingga 87,5% permasalahan pada kelima PA. Selain itu, penerapan rekomendasi juga secara tidak langsung menyelesaikan masalah pada PPQA dan PMC hingga 100%.
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Competition among software companies in Indonesia has been growing lately. The quality of software being made has become crucial to win the competition. This quality depends very much on the software process used by the company. Therefore, DMWSoftware as a software development company wants to improve their software quality by improving their software process, specifically from craftsmanship into engineering.

This is done so that the company can deliver good quality software, both in small and large scale projects.

The framework used in this study for software process improvement is CMMI-Dev (Capability Maturity Model Integration for Development) continuous representation. This study begins by assessing organisation?s process based on some process area (PA) in CMMI-Dev to determine the capability level of those processes. PAs are determined using CMMI roadmap, while assessment is conducted using SCAMPI-C (Standar CMMI Appraisal Method for Process Improvement) and PST tools (PIID and SCAMPI Tools). The next step is identifying the root causes of failure in achieving capability level one (in selected PA) using Ishikawa diagram. These root causes are then prioritized using Pareto diagram. Recommendations are given to solve the selected root cause, and analyzed to find the impact of implementing the recommendations. These recommendations are then validated by the company to determine whether these recommendations can be implemented to improve their software process.

Based on CMMI roadmap, five PA are obtained, namely requirement management (REQM), process and product quality assurances (PPQA), configuration management (CM), project planning (PP), and project monitoring and control (PMC). Using Ishikawa diagram and Pareto diagram, five major root causes are obtained, which are standar operating procedure (SOP) is not available, human resource is not available, documentation is not done completely, incomplete process, and unstandardized process. Recommendations are given to solve those root causes in each PA. Implementing these recommendations will help DMWSoftware in solving 75% to 87.5% problems found in those five PAs. In addition, by implementing these recommendations, DMWSoftware will indirectly solve the problems in PPQA and PMC up to 100%.;Competition among software companies in Indonesia has been growing lately. The quality of software being made has become crucial to win the competition. This quality depends very much on the software process used by the company. Therefore, DMWSoftware as a software development company wants to improve their software quality by improving their software process, specifically from craftsmanship into engineering. This is done so that the company can deliver good quality software, both in small and large scale projects.

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