Advanced Analysis of the Effect of Scrum and Kanban on Software Maintenance Projects

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Software maintenance is an extremely significant stage in the lifespan of a software system. As a result of maintenance, the software system is totally or partially deviating from its original state and has evolved into a new system. The software maintenance procedures have traditionally relied on the use of the "waterfall model." Replacing Agile with traditional software maintenance methodologies seems to be a huge change in the industry compared to the old days. In the industry, Agile methodologies have achieved extensive recognition and have left a substantial quantity of time. Agile methodologies are a collection of iterative and incremental techniques used in project management. Scrum and Kanban are two powerful Agile approaches for project management. Therefore, the objective of this study is to disclose whether the effectiveness of Scrum and Kanban techniques in terms of their impact on software maintenance project management factors. Factors of project management such as schedule, scope, budget, risk, resources, and quality were considered. Quantitative research was carried out in combination with a questionnaire designed to be distributed among professionals in the Sri Lankan IT sector, leading in a positive direction. Each issue in the questionnaire relates to one of the variables identified for project management and structured equation modelling evaluated the data gathered. Results indicate that the schedule, budget, and risk of a software maintenance project are managed effectively by both Scrum and Kanban, while the resources of a software maintenance project are managed effectively only by Scrum.

Keywords: Software Maintenance, Scrum, Kanban, Project Management