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Process Improvement Framework for DevOps Adoption in Software Development

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DevOps is welcomed by software development companies in recent years as a novel approach attached to the Agile software development methodology. Yet, they are in trouble with implementing DevOps because it doesn't just concentrate on technological changes. It alters the software development process more broadly. To assist this challenging process, DevOps maturity models have been established by a few scholars in recent years. Nevertheless, those models consist variety of drawbacks as; the majority of them have not been properly evaluated and published. This research aimed to provide a critical evaluation of the data available in existing studies on the DevOps maturity models and to propose a DevOps adoption process improvement framework that is validated by industry practitioners. To accomplish this target, a systematic literature review was applied and studied the available DevOps maturity models, weaknesses, and strengths of those models. A new framework for DevOps process improvement is developed by monitoring and contrasting the available data. Furthermore, it was assessed by an interview survey to strengthen the research's overall goal. The study presents a verified DevOps process improvement model which consists of four main DevOps success areas; DevOps practices, DevOps team, DevOps culture, and DevOps measurement. Each area follows five maturity levels starting with beginning to expert. This framework assists software development companies in obtaining benefits while reducing the difficulties associated with DevOps adoption.

Keywords: DevOps, *maturity, process improvement framework*