An analysis of software development process models and their applications in software industry

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The development of software takes into account a lot of different tasks until the software is released. The order in which these tasks are done is called the software development life cycle. When software development projects become larger and much complicated, it becomes more difficult to manage the software development process and issues such as updating software features and fixing errors came to attention. Thus methodologies named software process models which consist of set of specific activities have been developed. These software process models were introduced to address issues with changing clients' requirements, product quality, cost, time etc. When the software process model is not properly suitable for developing software, ultimately the end software product will be affected. On the other hand, each of these model's effectiveness varies with project circumstances. It is widely acknowledged that no single model is effective in all situations. At present, the most of software development companies have their own process models and standards in developing software due to increasing complexity of software projects and high demand for the software project success. They have been adding customization to theoretical process models according to projects' characteristics and improving software development process to deliver better software products.

However, there is lack of studies about real world, currently implementing software process models in software industry and about the changes/improvements in those process models according to projects characteristics thus creating a knowledge gap about what are the new changes/improvements in process models in current industry. In this research, we focus on this gap and a survey is conducted on 25 software projects from various software development companies. Through the survey it is found out about currently implementing software process models in different types of software projects and what are the new customizations done to those software process models according to the project characteristics. Finally we come up with suggestions to tailor software process models according to software projects and discover new trends in software process models.

Keywords: Software development life cycle, Software process models, Process models tailoring