7.4 Software Process Improvement for Very Small Enterprises: An ISO/IEC 29110 Based Assessment Method

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With the rapidly growing software market, the quality of software products became the key to gaining competitive advantage. Accordingly, Software Process Improvement (SPI) initiatives gained significance in the software industry as the quality of the software process will ultimately lead to the quality of the product. Over the last decades, many SPI models have been published and their success was recognized. However, most of these SPI models were perceived to be oriented towards large organizations. Not much attention has been given to Very Small Enterprises (VSEs) which constitute the majority of the software market share. These VSEs face environmental challenges such as the small number of employees, lack of expertise, tight budgets and time constrains. Consequently, VSEs faced difficulties in implementing the existing resource consuming SPI models. The ISO/IEC 29110 model was developed to resolve these difficulties and attain to VSEs needs. In spite of this fact, many researchers have accused the model in general and its assessment approach -that is conforming to ISO/IEC 15504 two dimensional model- in particular of being cumbersome and argued that it may need to be further adjusted when implemented in VSEs. This research proposes a tailored assessment method based on ISO/IEC 29110 that addresses VSEs’ environmental challenges. The method enables software process assessment and uses a technique for prioritizing outcomes of the assessment results based on VSEs’ business objectives and resources. An evaluation for the suitability of the tailored method in VSEs context is carried out in a VSE chosen as a case study.