Title: StakeMeter: Value-based stakeholder identification and quantification framework for value-based software systems

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Abstract: Value-based requirements engineering plays a vital role in the development of value-based software (VBS). Stakeholders are the key players in the requirements engineering process, and the selection of critical stakeholders for the VBS systems is highly desirable. Based on the stakeholder requirements, the innovative or value-based idea is realized. The quality of the VBS system is associated with the concrete set of valuable requirements, and the valuable requirements can only be obtained if all the relevant valuable stakeholders participate in the requirements elicitation phase. The existing value-based approaches focus on the design of the VBS systems. However, the focus on the valuable stakeholders and requirements is inadequate. The current stakeholder identification and quantification (SIQ) approaches are neither state-of-the-art nor systematic for the VBS systems. The existing approaches are time-consuming, complex and inconsistent which makes the initiation process difficult. Moreover, the main motivation of this research is that the existing SIQ approaches do not provide the low level implementation details for SIQ initiation and stakeholder metrics for quantification. Hence, keeping in view the existing SIQ problems, this research contributes in the form of a new SIQ framework called 'StakeMeter'. The StakeMeter framework is verified and validated through case studies. The proposed framework provides low-level implementation guidelines, attributes, metrics, quantification criteria and application procedure as compared to the other methods. The proposed framework solves the issues of stakeholder quantification or prioritization, higher time consumption, complexity, and process initiation. The framework helps in the selection of highly critical stakeholders for the VBS systems with less judgmental error.