

Stakeholder quantification and prioritisation research: A systematic literature review

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ABSTRACT

Context: Stakeholder quantification and prioritisation (SQP) is executed to quantify and prioritise stakeholders of the system based on their impacts. Selecting and involving the appropriate stakeholders are considered one of the major factors for producing a successful system. **Objective:** The objectives of this paper is to provide precise investigation regarding the SQP domain with respect to its impact on prioritising requirements, identifying SQP attributes, critically investigating the existing techniques, and presenting the challenges and recommended future works. **Method:** The systematic literature review (SLR) guidelines proposed by Kitchenham are adopted to guide the review process. The identified related studies underwent a rigorous study selection process. Thus, 31 out of 210 identified studies were selected as primary studies to address adequately the formulated research questions. **Results:** Findings demonstrate that SQP is a crucial process in requirement prioritisation (RP) because of its ability to identify stakeholders' impact on the systems requirements that lead to the production of a correctly prioritised list of requirements. Seventeen SQP attributes are revealed along with their description, usage impact, and degree of importance. Furthermore, nine techniques that focus on quantification and prioritisation of the stakeholders are identified and critically analysed in terms of their description, SQP process involved, SQP attributes used, types, and limitations. The findings reveal that these techniques face some challenges with respect to the lack of low-level implementation details, lack of automation and intelligence level, and heavy reliance on the involvement of experts. **Conclusion:** SQP has been extensively discussed in stakeholder analysis and requirement prioritisation domains. Based on the findings, a new intelligent solution is suggested to minimise the need for expert participation in conducting the SQP process along with proposing measurement criteria for the attributes used to evaluate the stakeholders. The deficiency of research works regarding the selection of SQP techniques is also observed.

KEYWORDS:

Stakeholders quantification; Stakeholders prioritization; Systematic review