

Shifting Paradigms in Stakeholder Identification: Integrating Enhanced Use Case Tool with Automated Analysis

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In the domain of complex process automation, accurate stakeholder identification is critical. Nevertheless, the methods employed by requirement-gathering professionals primarily focus on direct software users. This oversight can lead to incomplete stakeholder profiles, which endanger the sustainability of software projects. Specifically, these overlooked stakeholders are often well-known to Organizational Professionals, while the users are identified by Software Professionals. Currently, this task is done separately and is never amalgamated. Hence, the aim of this study was to develop a mechanism to engage both Organizational Professionals and Software Professionals in the process of stakeholder identification without significantly disrupting their roles and tasks. This aim was achieved through several key steps: first, selecting a requirement-gathering tool that effectively identifies users and a project management tool that prioritizes stakeholders. Next, the study identified the roles of both Software Engineers and Organizational Professionals in the stakeholder identification process and developed an integrated process for collaboration. This process culminated in the development of an automated tool, UC2IM, which allows both user identification and stakeholder prioritization. The proposed process was confirmed by both Software Professionals and Organizational Professionals. The UC2IM tool was then applied in a case study on urban flood management. Once the tool generated a list of stakeholders, they were verified through an expert discussion, which confirmed the tool's capability to identify all required stakeholders. The results showed that the tool successfully identified 100% of the stakeholders. This study concludes that the UC2IM tool significantly enhances stakeholder identification processes, leading to more comprehensive profiling and supporting the sustainability of automated systems. However, the tool was developed to propose a methodology, and thus, it should be further developed to improve its usability and achieve other quality attributes.

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