Title: An Approach for Deriving "Integration Requirements" for Enterprise Systems

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Over the past decades, Enterprise Systems (ESs) (also called Enterprise Information Systems (EISs)) have emerged as a promising tool for integrating and extending functionalities and services at both intra-organizational and inter-organizational levels [1]. In particular, ESs are, usually, the result of integrating two or more existing organizational systems into broader intra/inter-organizational ES [2]. The software engineering community has always been faced with different challenges in designing and developing larger complex systems such as ESs. One of these challenges is specifying the requirements for ESs, especially, the requirements related to the integration aspects of the ES (integration requirements), e.g., they may not be easily identified because they may manifest themselves in a vague way within the overall set of the ES requirements, they might be overlooked, ignored or considered irrelevant, they might exist in different forms (e.g., functional or non-functional requirements), etc. However, integration requirements are a vital success factor for any ES, they may have an impact on the overall performance of the ES since if they are incorrect, incomplete, and/or inconsistent; the ES-to-be is likely to suffer from serious issues [3]. Although much effort has been devoted to engineering requirements for ESs (e.g., [1, 4, 5]) with a particular focus on "architecturally significant requirements" (e.g., [2, 6]), no specialized approach has been developed for dealing with "integration requirements". This results in dealing with such important requirements in an ad-hoc manner.

The objective of this thesis is to fill the aforementioned gap by developing an approach for identifying (e.g., eliciting, specifying, and/or deriving), analyzing, and validating integration requirements for ESs. This objective will be achieved by (1) critically reviewing available literature on ES's requirements; (2) reviewing available requirements engineering practices, identifying their strength and weaknesses for dealing with integration requirements; and based on best practices (3) proposing approach for identifying, analyzing and validating integration requirements. The approach will be validated by applying it to a real/realistic case study/scenario.

References
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