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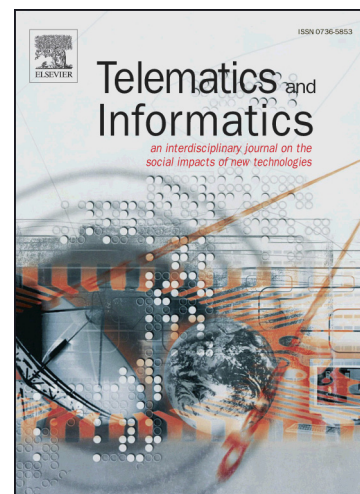
Toward Software Quality Enhancement by Customer Knowledge Management
in Software Companies

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Toward Software Quality Enhancement by Customer Knowledge Management in Software Companies

Abstract. Customer Knowledge Management (CKM) plays an important role in the production of high quality software products. As CKM in Enterprise Software (ES) development is still immature, this raises questions on how CKM enablers can be used to help ES development companies improve their software quality. In this study, Human, Organizational and Technological CKM enablers were identified from the literature. The weights of these factors were determined by experts from the ES development companies. Based on the most important factors, a theoretical model was developed. The proposed model was evaluated by distributing a survey questionnaire to decision-makers in ES development companies. The results showed that “Customer Involvement” together with “Trust” were the most influential factors, followed by “CRM Technology Infrastructure” and “Cross-Functional Cooperation”. In addition, there was no impact from “Organizational Training”, “Customer Knowledge Map”, and “CKM Strategy Development”. The results also revealed that the impact of CKM on software quality is significant. The proposed model in this study can be used as a guideline for the successful application of CKM in ES development companies to improve the software quality.

Keywords: Customer Relationship Management, Customer Knowledge Management, Software Quality, Enterprise Software, Knowledge Management

1. Introduction

Customer Knowledge (CK) is increasingly important for company competitiveness. Consequently, research on Customer Knowledge Management (CKM) is rapidly increasing (Korhonen-Sande and Sande, 2016; Wang, 2015; Rollins et al., 2012). CKM helps companies leverage their unique CK to improve the new product performance, enhance product/service quality, and cut costs (Korhonen-Sande and Sande, 2016; Salojärvi et al., 2013; Rollins et al., 2012). However, companies desiring to develop a well-functioning CKM face challenges (Korhonen-Sande and Sande, 2016; Wang, 2015; Rollins et al., 2012). In particular, there is a lack of research on how firms should deploy Human, Organizational and Technological conditions to manage CK and become more responsive to customer needs (Korhonen-Sande and Sande, 2016; Salojärvi et al., 2013; Garrido-Moreno and Padilla-Meléndez, 2011).

Many previous studies in software quality enhancement have only focused on the technical aspects of software quality such as reliability, maintainability, and functionality. However, because of the nature of Enterprise Software (ES), the transfer and integration of CK for customization, enhancements, maintenance and training is required (Schaarschmidt et al., 2015; Cho et al., 2013).

Customers are one of the most important stakeholders in any project (Association for Project Management, 2006). There is no doubt that appropriate communication and collaboration with customers in different phases of the ES development project can help in increasing the overall satisfaction of customers and the overall success of an entire project (Schaarschmidt et al., 2015). CKM could be used to facilitate the reception of customer feedback and the collection and utilization of customer information (Zhang, 2011). As the integration of CK in ES development is still immature, there is a lack of theoretical framework to fully capture the use of CKM to improve software quality in ES. In addition, there is a fundamental need to further explore how organizational factors such as CKM can enhance the ES quality. There are significant challenges regarding the transfer and integration of CK inside software companies. Attafar et al. (2013) reported that a lack of senior management commitment to CKM, poor communication, a lack of cultural readiness, and a lack of customer management skills are barriers to the CKM (Attafar et al., 2013). The major problems facing the effective application of CKM in any company are organizational, not technical (Smith and McKeen, 2005). According to Al-Shammari and Global (2009), successful CKM requires the transformation of organizations from product-centric operations to

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