Chapter 79
Knowledge Management in University–Software Industry Collaboration

Marcello Chedid

 https://orcid.org/0000-0003-0435-6568
University of Aveiro, Portugal

Leonor Teixeira

 https://orcid.org/0000-0002-7791-1932
IEETA / DEGEIT, University of Aveiro, Portugal

ABSTRACT

The university-software industry collaboration relationship has been represented a key resource, to the extent that together they can more easily promote technological development that underpins innovation solutions. Through a literature review, this chapter aims to explore the concepts and the facilitator or inhibitor factors associated with the collaboration relationships between university and software industry, taking knowledge management into account. This chapter is organized as follows. In the first section, the authors briefly introduce university, software industry, and knowledge management. The following section, based on the literature reviewed, provides a critical discussion of the university-software industry collaboration relationship, knowledge management in knowledge intensive organizations or community, and knowledge management in collaboration relationship between these two types of industries. Finally, in the rest of the sections, the authors point to future research directions and conclude.

INTRODUCTION

The current environment that characterizes the software industry is extremely dynamic and somewhat complex demanding high-performance solutions, rapid development and cost efficiency. The collaboration relationship with universities has been represented a key resource, to the extent that together more easily can promote technological development that underpins innovation solutions. In addition, several

studies point out knowledge sharing as an important and strongly influential factor in a collaboration relationship.

Organizations belonging to the software industry, as well as higher education institutions designated in this work as universities are recognized as organizations based on intensive knowledge. Given the knowledge intensive nature of the two types of organizations, the collaboration strategy requires the integration of specialized knowledge dispersed between each of the members of the work teams, usually multidisciplinary. The highly specialized knowledge, both tacit and explicit, is created and shared in the different phases of the relationship (Boyarchuk, Kharchenko, & Sklyar, 2018; Salavisa, Videira, & Santos, 2009). However, tacit knowledge becomes more important to the relations between these types of organizations (Ryan & O'Connor, 2013). Edmondson et al. (2012) add that the true value of a collaboration relationship is often associated with the tacit knowledge that is shared. This implies that possible solutions that aim at the sustainability and success of the relationship should be examined through knowledge management (Gill, 2002; Philbin, 2008).

In this study, the term "university-software industry collaboration relationship" is defined as an activity that involves the interaction between teams composed of people from academia (teachers, researchers and students) and software industry professionals. The objective of this collaboration is to create and share knowledge and technology, with neither party being relegated to a simple case study (Daria & Kostiantyn, 2018). This collaboration is expected to benefit the related members and teams (teachers, researchers, students and professionals), the organizations that establish the relationship and, consequently, the surrounding society (Boyarchuk, Kharchenko, & Sklyar, 2018). As suggested by Wholin (2013, p. 43), when universities enter into a collaboration relationship with the industry, they should not see it as just a place to study, but rather as a partner to do the study with.

Through a literature review, this chapter aims to explore the concepts and the facilitator or inhibitor factors associated with the collaboration relationships between university and software industry, taking knowledge management into account.

This chapter is organized as follows. In the next section, the authors briefly introduce university, software industry and knowledge management. The following section, based on the literature reviewed, provides a critical discussion of the university-software industry collaboration relationship and knowledge management in knowledge intensive organizations or community. Finally, in the remainder sections, the authors point future research directions, and conclude.

BACKGROUND

In this section, this chapter outlines a brief theoretical foundation of the study. The first part covers the context of the study. The second part presents the knowledge management.

The Context of the Study

About the University

Universities (or higher education institutions) are complex and heterogeneous organizations (Bozeman & Boardman, 2013), fragmented into different knowledge domains, structured through communities (e.g. pedagogical, scientific, and institutional) with inviolable values of freedom and academic autonomy

Related Content

A Comparative Study of Bayesian and Fuzzy Inference Approach to Assess Quality of the Software Using Activity-Based Quality Model

Kawal Jeet, Nitin Bhatiaand Renu Dhir (2013). *Designing, Engineering, and Analyzing Reliable and Efficient Software (pp. 96-111).*

www.irma-international.org/chapter/comparative-study-bayesian-fuzzy-inference/74876

A Formal Verification and Validation Approach for Real-Time Databases

Pedro Fernandes Ribeiro Neto, Maria Li´gia Barbosa Perkusich, Hyggo Oliveira de Almeidaand Angelo Perkusich (2009). *Software Applications: Concepts, Methodologies, Tools, and Applications (pp. 3160-3178).*

www.irma-international.org/chapter/formal-verification-validation-approach-real/29555

A Lightweight Measurement of Software Security Skills, Usage and Training Needs in Agile Teams

Tosin Daniel Oyetoyan, Martin Gilje Jaatunand Daniela Soares Cruzes (2017). *International Journal of Secure Software Engineering (pp. 1-27).*

www.irma-international.org/article/a-lightweight-measurement-of-software-security-skills-usage-and-training-needs-in-agile-teams/179641

HMM-Based Vietnamese Speech Synthesis

Son Trinhand Kiem Hoang (2015). *International Journal of Software Innovation (pp. 33-47).*

www.irma-international.org/article/hmm-based-vietnamese-speech-synthesis/133113

The Effect of Online Service Retailers' Quality Gaps on Customer Satisfaction

Asem Majed Othman, Vincent Omachonuand Emad Hashiem Abualsauod (2017). *International Journal of Systems and Service-Oriented Engineering (pp. 21-44).*

www.irma-international.org/article/the-effect-of-online-service-retailers-quality-gaps-on-customer-satisfaction/188593