Chapter 13
The Effect of Team Work Quality on Team Performance in Global Software Engineering

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ABSTRACT

Global software engineering (SE) has increased in popularity and is now commonplace in most software organizations. This is due to the fact that business and technology have evolved, which has had an impact on the borderless world. As a consequence, software teams are often geographically dispersed, though they all have the same goal—to produce high-quality software. In order to achieve that goal, quality teamwork is important to build a high-performance team. This study aims to get an in-depth understanding of what quality teamwork is, as well as investigate how communication and socialization can have an impact on team performance. This study took a qualitative approach to the data collection process by carrying out interviews with three experts of agile distributed teams. The results of this study demonstrate that active communication stimulates socialization, and thus increases and maintains morale and motivation among team members. Future studies could focus on the impact of other quality teamwork, such as the influence of trust on team performance among global SE teams.

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INTRODUCTION

Global software engineering (SE) is gaining prominence in today’s software industry. As a consequence of a number of issues, such as tight budgets and shortages of resources and time, most companies build joint ventures and set up development sites in low-cost countries (Smite et al., 2010). Therefore, global software engineering involves software development across more than one single location, which requires rules and procedures to coordinate the geographically-dispersed teams.

Several factors can affect software failure in global SE. This includes the absence of project management skills, client commitment, teamwork and collaboration among team members (Porrawatpreyakorn, Quirchmayr, & Chutimaskul, 2009). Owing to the rapid development of the software industry; specifically, in global SE, human and social factors play a critical role in software development. However, research on the human factors in global SE is still scarce. During software development, communication among team members is compulsory in order to communicate the status of a project. When communication happens actively, socialization among team members can increase. This can promote informal communication and confidence among team members. Previous research has demonstrated that a lack of communication can impact the high risk of poor performance (De Farias, De Azevedo, De Moura, & Da Silva, 2012). In addition, the absence of communication may also affect low productivity among team members (Moe, Dingsøyr, & Dybå, 2010). Moreover, a lack of socialization may affect the communication, and thus, lower team performance (Steinke, 2011). These two components are crucial in a global SE teamwork. Thus, this paper focuses on two quality team factors; namely, communication and socialization on team performance.

RELATED WORKS

Software organization relies on teamwork in order to accomplish tasks and assignments effectively. Working in a team may increase team results efficiently rather than working in silo (Fung & Ali, 2011). This is specifically true in any software development activity that requires human extensive tasks that involve communication and socialization among team members. Thus, online collaboration tools have emerged in the market to encourage active communication with less cost among global SE teams (Sudhakar, Farooq & Patnaik, 2011; Lavallée & Robillard, 2018).

Many organizations strive to gain benefits offered by global software engineering (Lous et al., 2017; Smite et al., 2014). Global SE tends to produce a high return in investment; however, there are many challenges related to global SE. Most global software development companies find that the process of developing and launching
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