The Impact of Conflict Judgments between Developers and Testers in Software Development

Xihui Zhang, College of Business, University of North Alabama, Florence, AL, USA
Jasbir S. Dhaliwal, Fogelman College of Business and Economics, University of Memphis, Memphis, TN, USA
Mark L. Gillenson, Fogelman College of Business and Economics, University of Memphis, Memphis, TN, USA
Thomas F. Stafford, Fogelman College of Business and Economics, University of Memphis, Memphis, TN, USA

ABSTRACT

The primary role of testers is to verify and validate the software produced by developers to ensure its quality. Testing is designed to catch problems in the software and report them for correction, so it is a conflict-laden, confrontational, and judgmental process. This "audit" role of testing is inherently adversarial, ensuring the development of components of interpersonal conflict judgments between developers and testers. Prior research indicates that such conflict is likely to be negatively associated with software quality and job satisfaction, producing negative judgments about the artifact production process and about the job itself. This study addresses the question: How do judgments of conflict between developers and testers impact the software development process? The authors develop and empirically test a research model which proposes that the conflict judgment targets of both the tasks and the persons who perform them will have direct impact on both software quality and job satisfaction judgments. Results of testing this model indicate that interpersonal judgments arising from conflict, as well as judgments made by testers and developers about the conflict targets of tasks and persons negatively influence subsequent software quality and job satisfaction judgments. Implications for theory and practice are discussed.

Keywords: Interpersonal Conflict Judgments, Job Satisfaction, Person Target Judgments, Software Development and Testing, Software Quality, Task Target Judgments

DOI: 10.4018/JDM.2013100102
INTRODUCTION

One of the most important role interactions in software development is between developers (i.e., systems analysts, designers, and programmers) and testers (Cohen et al., 2004; Robey et al., 2001). Prior research on conflict in information systems (IS) development has typically focused on conflict and disagreements between end users and IS development staff (e.g., Barki & Hartwick, 1994; Barki & Hartwick, 2001; Beath & Orlikowski, 1994; Robey et al., 1993; Robey et al., 2001; Smith & McKeen, 1992; Wang et al., 2005; Yeh & Tsai, 2001), or conflict factors arising among IS staff (e.g., Dos Santos & Hawk, 1988; Jiang et al., 2002; Klein et al., 2002; Wang et al., 2005). However, developer-tester interactions are also inherently adversarial, resulting in the high likelihood of interpersonal conflict, which is compounded by intrinsic task and individual differences (Cohen et al., 2004). Specifically, conflict occurs because software developers and testers (1) work in a highly interdependent manner, (2) have different and sometimes conflicting responsibilities, (3) use contradictory methods to accomplish their goals (e.g., Brehmer, 1976), and (4) must work jointly while at the same time competing for scarce resources, e.g., project personnel and time (Cohen et al., 2004; Robey et al., 2001).

Thus far, little research has focused specifically on the issues and contributory components of conflict between software developers and the testers who assess the finished product, and this is the focus of this paper.

In line with existing literature on the prominent characterizations of the nature of conflict in software development and testing (e.g., Barki & Hartwick, 2004; Cohen et al., 2004), we see an area for significant contribution in a focus on aspects of developer and tester judgments about the development/testing task, itself, and about each other as putatively cooperating team members in the software testing process. In particular, this study addresses the following research question: How do judgments of conflict between developers and testers impact the software development process? Increased understanding of the impact of such conflict can facilitate the development of strategies and tactics for managing such conflict and ensuring positive developer-tester relationships, which are critical for improving overall software development effectiveness and efficiency.

This paper is structured as follows. First, we provide a theoretical justification for the research. Next, we discuss theoretical development of a research model and hypotheses. Then, we describe the research methodology, including measurement items, survey procedure, and demographics of the respondents. After that, we present data analysis and results. Finally, we conclude the paper with a discussion of theoretical and practical implications of the findings.

PRIOR RESEARCH

There are four aspects of the software testing literature to be considered in building a theoretical platform for the assessment of conflict between developers and testers: (1) aspects of the judgmental differences between developers and testers, (2) the evolution of software development methodologies and the subsequently changing role of software testing, (3) mixed findings of past empirical studies, and (4) issues related to the operationalization of conflict. We review each of these aspects of the research briefly as follows.

Judgmental Differences between Developers and Testers

Developers and testers interact intensively in software development but are very different from each other in terms of mindsets, goals, experiences, and perceptions of their relative importance (Cohen et al., 2004; Pettichord, 2000). These differences, which can result in increased conflict (Jehn et al., 1997), have multiple dimensions. First, there is a difference in their view of work: developers think in terms of “building” software artifacts whereas testers think of “breaking” the same artifacts. It has been shown in the psychology literature that
A Combined GA-Fuzzy Classification System for Mining Gene Expression Databases
www.igi-global.com/chapter/combined-fuzzy-classification-system-mining/44384?camid=4v1a

Knowledge-Based Systems as Database Design Tools: A Comparative Study
www.igi-global.com/article/knowledge-based-systems-database-design/51220?camid=4v1a

The Graph Traversal Pattern
Marko A. Rodriguez and Peter Neubauer (2012). Graph Data Management: Techniques and Applications (pp. 29-46).
www.igi-global.com/chapter/graph-traversal-pattern/58605?camid=4v1a