Chapter 6.13

Service Quality Evaluation Method for Community–Based Software Outsourcing Process

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ABSTRACT

Community-based software development is a promising model to help reduce the pressures such as development costs, human resources access, new market development, and building business competencies. But the big concern is how to ensure the quality of the outsourcing service. In this paper, a service quality evaluation method for community-based software outsourcing process has been proposed. A service quality indicator model with three layers and five dimensions is explained and applied to community-based software outsourcing service supported by Call-For-Implementation (CFI) platform. The calculation method for each quality indicator is demonstrated in detail. A prototype is developed to support the evaluation process and exhibit results of quality evaluation for the community-based software outsourcing based on CFI. This prototype not only measures and displays the status of service quality in real-time, but also provides history data to guide software outsourcing process management.

1. INTRODUCTION

With the growing GDP of service sector and advanced development of information technology, service–based economy is emerging. In order to gain advantages in the competition service quality is increasingly attracting wide attentions. The higher service quality means the higher customer satisfaction, and ultimately results in higher revenue growth and profitability. Among the various services outsourcing service has become an important business strategy in many service industries, especially in software industry (Lacity & Wilkocks, 2001). More and more enterprises are looking to outsource their software development, respond to the pressures such as development costs, human resources access, new market development, or building business competencies (Heeks, Krishna, Nicholson, & Sahay, 2001). Recently, to outsource software development to the community developers through Internet has been recognized and adopted by more and more people. Meanwhile, a big concern has risen on how to effectively control and evaluate the quality of the community-based software outsourcing process.

Service quality is a concept that has aroused considerable interests and debates in the research literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either (Fogarty, Catts, & Forlin, 2000). While there have been efforts to study service quality, include SERVQUAL, SERVPERF, Kano's model and etc. The SERVQUAL model developed by Parasuraman, Zeithaml, and Berry (1985) has been extensively applied to measure consumers' perceptions of service quality (Parasuraman, Zeithaml, & Berry, 1985, 1988). The SERVPERF model is another service quality measurement instrument, was developed later by Cronin and Tayor, which inherited from SERVQUAL and expanded SERVQUAL (Cook & Heath, 2002). Even thought there has been no general agreement on the effective way to measure service quality. On the other hand there are considerable studies on software quality and measurements include McCall model (1977), Boehm model (1978), furps model (1987), and ISO/IEC 9126:2001 (Ortega, Perez, & Rojas, 2003; Kan, 2003; Chang, Wu, & Lin, 2008; International Organization for Standardization, 2001, 2003, 2004). But these quality models are fit for software itself as a product not for software outsourcing services. And all aforementioned quality evaluation methods are carried out afterwards. There is lack of study on real-time quality evaluation which ties software development process and service together, especially on community-based software outsourcing service. The purpose of this paper is to try to fill the gap by illustrating a service quality evaluation method of community-based software development model based on a Call-For-Implementation (CFI) platform.

The paper is organized in five sections as following. The introduction section followed by overview of community-based software outsourcing process based on CFI platform. The 3rd section illustrates the service quality evaluation method for community-based software process. And a prototype is presented in the sections 4 which followed by the conclusion.

2. OVERVIEW OF COMMUNITY-BASED SOFTWARE OUTSOURCING PROCESS

CFI is a community-based software development method put forward by IBM China Research Lab. This enterprise-to-individual software outsourcing model targets to help create businesses between enterprises and the large community. The community described here is a virtual group composed of individuals such as college students, high school students, and programming freelancers. Based on CFI some labor intensive works in software development, such as coding and testing tasks can be outsourced to the community developers. By leveraging a large number of community

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