Chapter 10
Automatically Evaluating the Quality of Contents Created by Open Collaborative Knowledge Building

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ABSTRACT

Using wikis, with minimum planning, significant projects can be accomplished almost effortlessly by collaborative knowledge building through continuous contributions from caring community members. Since any registered member can change the content of a wiki page at any time, how to enhance the quality of a wiki becomes a pressing issue. This paper reports a pilot study of identifying factors that can enhance the quality of contents built by open collaborative knowledge building. Using stepwise discriminant analysis and logistic regression, several variables were successfully identified that could contribute positively to the high quality of wiki pages. The result was analyzed using Receiver Operating Characteristic (ROC) curves from signal detection theory. The predictor worked remarkably well and was promising, with a high detection rate and a low false-alarm rate. The finding can help programmers and architects of open collaborative knowledge building systems to design and implement mechanisms that will facilitate high quality content creations.

INTRODUCTION: THE QUALITY OF WIKI CONTENT

The first wiki, with the name WikiWikiWeb (also known as WardsWiki, see Figure 1), was invented by Ward Cunningham in 1994 in order to make the exchange of ideas between programmers easier (“WikiWikiWeb History”).

WikiWikiWeb was then installed in an Internet domain (i.e., URL: http://c2.com) in 1995. Since it was basically used by a small group of computer programmers, quality control of individual wiki page was not an issue. Until the end of the last century, not too much people know about wikis. Wiki became very popular primarily due to the success of Wikipedia (http://www.wikipedia.org, see also Ebersbach et al 2008) which was launched...
Wiki provides a simple platform for accumulating, sharing and structuring information where community members can contribute freely. Because of the appearance of Wiki, Collaborative Knowledge Building becomes a popular practice for many knowledge-based organizations to deliver documentation, to replace their FAQs, and to offer help-pages to their members, especially for the institutions and organizations who encourage the constitution and maintenance of self-organizing social networks of users (Wasko & Faraj 2005, Lin et al 2006, Moore & Serva 2007), and for the companies who have a customer-centric philosophy (Wagner & Majchrzak 2007).

As a collaborative writing environment, the power of a wiki rests on its essential characteristic, i.e., there is no ultimate authority and no final definite wiki page. There may be a general direction or theme, but the actual content of a wiki is molded and manifested by contribution made by individual members and accumulated through community collaboration. In other words, any member of the community can affect its quality. While wiki becomes increasingly popular, involving all kinds of content contributors, the question of how to enhance or ensure its quality also becomes more and more pressing (Lih 2004,
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