

Chapter 2

Measuring the Effectiveness of Wikipedia Articles: How Does Open Content Succeed?

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ABSTRACT

Since 2001 Wikipedia has grown up to one of the most important sources of knowledge worldwide. The voluntarily and independent nature of the project has made it a very unique case of Information Systems with various elements which could affect the way each article is developed. In this paper by referring to the DeLone & McLean model of Information Systems success and considering the body of research in the field, the measures for evaluating the effectiveness of wiki articles have been identified. Then using a sample of 804 articles in Wikipedia and Structural Equation Model (SEM) method the model has been validated. The findings indicate that in the context of Wikipedia open content, system quality and information quality could be merged together and after this simplification, they can affect use and user satisfaction in open content platforms such as Wikipedia.

INTRODUCTION

Wikipedia has started as a “user-written online encyclopedia” in 2001 and fast expanded to one of the biggest sources of knowledge which is available freely online (Tapscott & Williams, 2008). Although its growth rate has been variable over

time (Manjoo, 2009), it has been one of ten top rated websites according to Alexa ranking (www.alexa.com).

Wikipedia has been started as an independent project and after 2003 it has been part of the non-profit Wikimedia foundation. The aim of the project at first was to develop a free, collaboratively

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edited and multilingual internet encyclopedia but the idea soon extended to other websites such as: Wiktionary (collaborative dictionary), Wikibooks (free textbooks), Wikiquote (Collection of quotations), etc. Now after 11 years Wikipedia has more than 22 million articles in 285 languages (over 3.9 million in English) and it is estimated to have 365 million readers worldwide.

In Wikipedia there are specific regulations for adding, improving, editing and deleting articles which are free or open content (OC) and everyone could participate in these processes. The process which undergoes for an article from beginning to a mature or reliable article involves many different steps and many stakeholders play different roles in this process.

The collaborative structure of the project makes it possible for everyone to contribute in the project by adding new content and editing available content. Moreover, volunteer members monitor the developed content and by various mechanisms deal with problematic content (including: copyrighted content, unstructured content, and the content which its correctness is suspicious). The structure of the website makes it possible for even anonymous users to edit (most of the) content. As a result of this open editing model, the quality of Wikipedia's content has often been questioned (Javanmardi, Ganjisaffar, Lopes, & Baldi, 2009). Although various research studies have positively reported the quality of Wikipedia posts in comparison by other sources (Adler & De Alfaro, 2007; Chesney, 2006; Giles, 2005; Gorgeon & Swanson, 2009; Kramer, Gregorowicz, & Iyer, 2008; Wilkinson & Huberman, 2007b), a pessimistic viewpoint still exist in academia in regards to validity of Wikipedia posts as "scientific references".

Moreover the success of Wikipedia has inspired many others to use the same idea for sharing their knowledge in thousands of wikis all over the world and shaped new paradigm for collaborative work. Today; wikis have been used for different purposes as part of enterprise information systems (Albors,

Ramos, & Hervas, 2008; Yates & Paquette, 2011). It has also inspired a new form of sourcing by which an organizational task is performed by a large group of people and has been later named crowdsourcing (Howe, 2006a, 2006b, 2008). This model has been used in various contexts in practice (Anderson, 2011; Brabham, 2008a, 2008b, 2009), and attracted much attention from researchers and academia (Amrollahi, Ghapanchi, & Talaei-Khoei, 2014a; Behrend, Sharek, Meade, & Wiebe, 2011; Pedersen et al., 2013).

This attention from both research and practice perspectives shows the importance of Wikipedia as both a source of knowledge and a new paradigm in information systems. Although many aspects of the website has been studied in the information systems literature and related areas, the process which leads to development of an effective success has not been studied in the literature.

In the current research we aim at understanding the process by which a Wikipedia post succeeds initial steps of development and becomes reliable, useable, effective or successful for its audience.

Findings of this research may help foundations like Wikimedia to better advance their products. Businesses that use wiki-type systems as their knowledge management or other information systems can also benefit the result of research for advancement of these systems.

To gain a better understanding of the factors that result in the effectiveness of wiki articles and the measures by which this effectiveness could be measured, we use current body of research in success of Information System. The most cited research in this category is "DeLone and McLean model of IS success" (Delone, 2003).

Information systems evaluation models have been already used to evaluate the effectiveness of IS in various context including e-government, open source software, financial systems, and collaborative systems (Alavi & Leidner, 2001; Ding, Hu, Verma, & Wardell, 2009; Gil-Garcia, 2012; Horsti, Tuunainen, & Tolonen, 2005; Pitt, Watson, & Kavan, 1995; Rai, Lang, & Welker,

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