# Understanding the Factors for Fast Answers in Technical Q&A Websites: An Empirical Study of Four Stack Exchange Websites

An Extended Abstract of a Paper Published in Empirical Software Engineering Journal

(Communicated by Per Runeson)

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## ABSTRACT

Technical questions and answers (Q&A) websites accumulate a significant amount of knowledge from users. Developers are especially active on these Q&A websites, since developers are constantly facing new development challenges that require help from other experts. Over the years, Q&A website designers have derived several incentive systems (e.g., gamification) to encourage users to answer questions that are posted by others. However, the current incentive systems primarily focus on the quantity and quality of the answers instead of encouraging the rapid answering of questions. Improving the speed of getting an answer can significantly improve the user experience and increase user engagement on such Q&A websites.

In this paper [1], we study the factors for fast answers on such Q&A websites. Our goal is to explore how one may improve the current incentive systems to motivate fast answering of questions. We use a logistic regression model to analyze 46 factors along four dimensions (i.e., question, asker, answer, and answerer dimension) in order to understand the relationship between the studied factors and the needed time to get an accepted answer. The question dimension calculates various textual and readability features of a question, as well as the popularity and difficulty of the question's tags. The asker dimension calculates the reputation of an asker and his/her historical tendency to get answers. The answer dimension computes textual features from the text of the accepted answer. The answerer dimension computes the historical activity level of the answerer who answered the question. We conduct our study on the four most popular (i.e., with the most questions) Q&A Stack Exchange websites: Stack Overflow, Mathematics, Ask Ubuntu, and Superuser. We find that i) factors in the answerer dimension have the strongest effect on the needed time to get an accepted answer, after controlling for other factors; ii) the current incentive system does not recognize non-frequent answerers who often answer questions which frequent answerers are not able to answer well. Such questions that are answered by non-frequent answerers are as important as those that are answered by frequent answerers; iii) the current incentive system motivates frequent answerers well, but such frequent answerers tend to answer short questions.

Our findings suggest that the designers of Q&A website should improve their incentive systems to motivate non-frequent answerers to be more active and to answer questions faster, in order to shorten the waiting time for an answer (especially for questions that require specific knowledge that frequent answerers might not possess). In addition, the question answering incentive system needs to factor in the value and difficulty of answering the questions (e.g., by providing more rewards to harder questions or questions that remain unanswered for a long period of time).

***The full paper is published in the Empirical Software Engineering journal, and can be found at:***
*https://link.springer.com/article/10.1007%2Fs10664-017-9558-5*

***Please cite the following paper:*** *Understanding the factors for fast answers in technical Q&A websites: An Empirical Study of Four Stack Exchange Websites, Shaowei Wang, Tse-Hsun Chen, Ahmed E. Hassan, Empirical Software Engineering (2017), pp 1-42.*

## KEYWORDS

Q&A websites, Factor importance analysis, Response time

## REFERENCES

[1] Shaowei Wang, Tse-Hsun Chen, and Ahmed E. Hassan. 2017. Understanding the factors for fast answers in technical Q&A websites. *Empirical Software Engineering* (2017).


*ICSE '18, May 27-June 3, 2018, Gothenburg, Sweden*

ACM ISBN 978-1-4503-5638-1/18/05.
https://doi.org/10.1145/3180155.3182521