**PAPER 2**

On the Relationship between User Churn and Software Issues

**TITLE:** On the Relationship between User Churn and Software Issues

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Summary

INTRODUCTION

The satisfaction of users is only part of the success of a software product, since a strong competition can easily detract users from a software product/service. Such data about user satisfaction has been continuously used by researchers to study the most important factors to explain user satisfaction. For example, Panichella et al. identified useful user reviews of mobile apps. so that developers can improve their apps accordingly (e.g., by addressing feature requests within such reviews). Other research works have extracted user feedback , and studied the planning process of future releases based on user reviews.

The success of software projects is not only defined by the relationship between the software product and its users, but also by the strengths and weaknesses of competitors. a poor user experience may create a bad reputation for the software product, which impairs the adherence of new users (which would likely adhere to the competitors). An important area of study is to unveil the underlying reasons for losing users to competitors. User churn is the jargon used to denote when a user decides to change from a product/service to those offered by the competition.

User churn has been studied extensively in areas other than software engineering, such as mobile operators and telecommunication networks. g Yahoo Answers , Stumble Upon (a web content recommendation system) , Top Eleven - Be A Football Manager (an online mobile game) , Pengyou (a Chinese social network) , using prediction models for predicting user churn.

In this paper, They use data obtained from the alternativeto.net1 website, which has a unique feature that allows users to recommend alternatives for a specific software product. The recommendation of alternatives can signal the intention to switch from one software product to another. They refer to the recommendation for an alternative software product as simply potential user churn.

By using the alternativeto.net dataset, They formulate an empirical study to investigate the (i) Web Browsers, (ii) IDEs and (iii) Web Servers domains on the alternativeto.net website.

They first extract 3,556 reviews and 10,081 comments to better understand the overall concerns of users regarding the software products in the studied domains.

The goal of the alternativeto.net website is to help users to find software alternatives that can better address the users’ necessities. For instance, let us consider that a user needs a better .pdf reader (e.g., the current reader freezes occasionally). The first challenge occurs because the user is not aware of all the available software alternatives. In addition, choosing an alternative for a software is not always simple, since users may be already familiar with a set of features (from the software in use), which they would not like to compromise. Considering the .pdf reader example, while the user wishes a freezing-free alternative, the user may only feel comfortable to change if the alternative provides the same level of commenting capabilities (as compared to the reader in use).

Research Methodology

The objective of the aternativeto.net site is to assist clients with finding programming options that can all the more likely location the client’s necessities. The principal challenges happens because the client doesn’t know about all the accessible programming options. Likewise , picking an option for programming is not generally basic since clients might be as of now acquainted with a lot of highlights (from the product being used), which they might not want to settle . considering the .pdf per user model ,while the client wishes a san freezing elective, the clients may feel good to change if the option gives a similar degree of remarking capacities( when contrasted with the per user being used ). Aternativeto.net permits clients to give audits to programming options alongside evaluations (also to Google Play, which permits surveys to be accommodated portable applications). In any case,What sets alternativeto.net separated from different stages is that it permits clients to voice their assessments by putting a product item in context to its rivals.

RESULTS

In this paper finally got result, They study the data available on alternativeto.net to better understand the relationship between software issues and the potential user churn of users. Having observed that user concerns are tightly related to software issues (e.g., bugs), They investigate the relationship between issue reports and the potential user churn of users. Their study reveals key issues that must be addressed for the success of a software product (depending on the domain). For example, they observe that the potential user churn of users may be tightly related to the lack of a robust documentation and support for testing tools (in the “IDE” and “Web Server” domains). Finally, their machine learning models reveal that (i) the longer the issue takes to be fixed, the higher the chances of user churn; and (ii) issues within more general software components are more likely to be associated with user churn. Finally, they suggest that the current prioritization performed by developers should be augmented to encompass the long lived and highly interactive issues. In overall, their study suggests that the prioritization process of issues can be improved by considering the potential user churn of users associated with such issues.