Impact of Developer Experience in the outcome of Software Projects

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Abstract

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Preface

I want to thank Professor Pirjo Professori and my instructor Dr Alan Advisor for their good and poor guidance.

Otaniemi, Date to te announced

Anders Nylund

Contents

Thesis dictionary

DX Developer Experience
UX User Experience

1 Introduction

A software project is a project where a group of people share a common goal what can for example be to create a product or service. In a software project there is a developer or multiple developers that have the responsibility of implementing the technical product itself. The developers are the ones writing the executable source code for the program or service, so that it can by it's functions and features achieve the requirements set to it.

Software developers are in a crucial role when considering the success of a software project.

In this thesis the term *Developer Experience* is examined and studied. Developer experience is a rather new concept in the scene of software engineering.

Developer experience can be divided into three different sub areas – cognitive (How do developers perceive the development infrastructure?), affective (How do developers feel about their work?), and conative (How do developers see the value of their contribution?) [2].

1.1 Motivation

Developers in software projects are in a crucial role when considering the success of software projects.

The same way as User Experience (UX) is considering the user of a system or tool, Developer Experience (DX) can be seen as the experience that developers have as users of a system. Here the system however includes the tools, frameworks, processes that the developer is the user of when developing software.

Developer experience has not been studied that much previously. There has been a doctoral thesis published about the topic recently [1]. In this thesis

DX has been studied previously, but research on it is still lacking the connection to practical applications. This is one the biggest motivators for this thesis, as the topic is novel and there is huge potential in improving software development processes, and thereby also potential to improve the outcome of the projects.

There is possibly huge value that can be gained from studying Developer Experience and learning about how it works. A better experience can help organizations

Currently a quick search for Developer Experience on google gives as a result mostly articles on how framework and library authors should consider their users (developers) experience with using the product (tool, library, framework). However, DX is something more and includes also the feelings and perceptions of the developers. In [2]

1.2 Research questions and problem

The research problem is finding out *How the developer experience in software projects can affect the outcome.*

Table 1: The research questions

RQ 1	How is Developer Experience defined in software projects?
RQ 2	What aspects of Developer Experience are currently being considered in software projects? What aspects of Developer Experience do developers see as valuable?
RQ 3	Can the results of software projects be improved by investing in a better developer experience?

1.2.1 Alternative research problems:

- "How Developer Experience affects the productivity of developers in software projects"?
- "How the cognitive Developer Experience can affect the outcome of Software Projects". This would allow to restrict the scope of the thesis significantly, as the cognitive Developer Experience takes only into account the *"technical"* parts e.g. Platform, techniques, process, skill, procedures [2]

1.3 Scope and focus

1.4 Structure of the thesis

1. Background and literature review

2 Background and literature review

This section includes the background and literature review of the topic. The background of the topic should be covered equally from all points of view.

3 Research material and methods

What material will be used in the research and what methods/methodologies will be used to study the problem. What kind of approach to research will be used in the thesis.

4 Results

Answer the research questions and problem.

4.1 Validity of results

Tässä osassa on syytä myös arvioida tutkimustulosten luotettavuutta. Jos tutkimustulosten merkitystä arvioidaan »Tarkastelu»-osassa, voi luotettavuuden arviointi olla myös siellä.

5 Summary

6 Conclusions

References

[1] F. Fagerholm. *Software Developer Experience : Case Studies in Lean-Agile and Open Source Environments*. PhD thesis, University of Helsinki, 2015.

[2] F. Fagerholm and J. Münch. Developer experience: Concept and definition. *CoRR*, abs/1312.1452, 2013.