Agile practices adoption in growing entrepreneur companies: A Lean approach

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Master’s Thesis

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Abstract

Abstract is needed to sum the master’s thesis up. The abstract is to be uploaded into Optima before the final grading of the thesis. Please find the current information about the format given in Optima.

The guide includes instructions for students. It is written keeping in mind the idea that the user may utilise it e.g. by pasting his or her text on the current text. The contents include information about formatting the text, positioning tables and figures, among other things. In addition, the use of proper literature is instructed. Even if there is no strict structure for the thesis, a recommendation is offered in this guideline.

One important guideline for the text is that do not write too short paragraphs. For instance, if there is only one sentence in a paragraph, the sentence must be really important and influential to form a paragraph of its own.

It is not possible to provide information in a guideline like this for all issues related to master’s thesis. For example, the research process, ways to acquire research material and its analysis are excluded in the guideline. On the other hand, a structure for a research plan is provided in the appendices.

Keywords

first keyword, second keyword, other keywords

Supervisor

Title, position First name Last name

Foreword

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# Introduction

Agile is a group of software development methodologies based on 4 main principles of individuals and interactions, working software, customer collaboration and responding to changes (Beck, K et al, 2011). The advantage of Agile to others development methodologies is its lightweight processes which defining agility as ‘strip away as much of the heaviness, commonly associated with the traditional software development methodologies, as possible to promote quick response to changing environments, changes in user requirements, accelerated project deadlines and the like’ (Erickson, Lyytinen, & Siau, 2005). This explains for the fact that Agile methods have become popular in software development business, mostly small and medium companies while larger firms starting to look at its benefits. Thus, the mentioned principles have the goal of creating maximum value for the limited available resources (Nguyen & Huynh, 2013), and it is also the main purposes of adopting practices in entrepreneur companies, which explains the popularity of Agile in startup world.

There are several definitions of what is a startup and based on the definition from Eric Rise a startup has three main components: institution, innovation and extremely uncertainty (Ries, 2011). These factors came from the fact that most of the technology startup companies are very small at early stages and do not have enough resources to do many tasks at the same time. Before there is any framework or guideline to adopt Agile for young firms, Blotner suggested that the combination of Agile models and plan-driven models is a good choice for startups (A. Blotner, 2002). In 2011, Eric Rise introduced Lean as a new approach of Agile for entrepreneurs, in which building products iteratively is advocated along with the early delivery to the market. It has proved it advantages impressively when comparing to other approaches which make most of the recent startup are using this method.

Expansion is the nature of a successful startup, it helps new business remain the competitive advantages and establish a firm foothold on the market (Allen, 2011). Unlike medium or large companies, most of the tech startup is not good at management since the founder’s background is from technology, which creates some chaotic actions when the companies starting to grow and more people come in. Furthermore, LEAN is a product-oriented Agile method which suitable for small size team but when growing the number of members will be increased so there is a need to change the development model. On the other hand, there are several Agile Framework have been proposed for large-scale companies, such as Large Scale Scrum (LeSS) The Scaled Agile Framework (SAFe), Disciplined Agile Delivery (DAD) (Paasivaara, 2017), and Spotify Model (H. Kniberg & A. Ivarsson, 2012). There is the fact that all of these aforementioned methods are geared toward solving problems in large projects while the differences are in their form of team size, training, certification, and practices adopted (Alqudah & Razali, 2016). This information will contribute can help entrepreneurs to acquire suitable process for scaling their business with agility especially Lean startups.

## Motivation

The difficulty of introducing agile methods increases with the organization size especially when there are many dependencies lead to the need for formal documents thus reducing agility (Dikert, Paasivaara & Lassenius, 2016). In the cases of entrepreneur’s company, agility helps them to deliver their products fast and effectively; quickly adapted products to the environment mean there are more chances to be successful in this very competitive field, therefore growing can reduce this strength. Also, agility methods also affect management and business-related functions, therefore keeping this characteristic can be vital to this type of firms. There are suggestions that each large organization should find its own balance of agile and plan-driven methods (Boehm, 2002). The fact that more and more big organizations are adopting SAFe (a large-scale Agile framework) is proving this suggestion.

On the other hand, the uncertainty of growing startup along with the high turnover rate in employees made the adoption for practices in the mentioned frameworks is not an easy task. In prior researches, they focus on the big companies and neglect this type of firm and this is the motivation for my thesis. To conclude, finding practices and recommendations for an expanding startup can keep its agility while improving maturity structure and lessons can be learned from big Agile companies’ adoption is the aim of the thesis.

## Research questions

**RQ1**: How LEAN startups can keep their agility when growing?

**RQ2**: Which practices from large-scaled agile frameworks can be adopted for entrepreneur firm when expanding?

# Research methods and design

Qualitative research method data gathering as semi interview questions

Why choose qualitative

Formation of questions

Choose company and why it is appropriated

# The LEAN startup

## The history of LEAN

## LEAN methodologies in software development

# Large-scale Agile frameworks

## What is large-scale Agile frameworks

## The effects of agility in big companies

# Agility in software development

## Agility roles in small company

## Agility versus Maturity

## Business effects of agility

# References

Allen, K. R. (2011). *New venture creation* (International Edition ed.)

Erickson, J., Lyytinen, K., & Siau, K. (2005). Agile modeling, agile software development, and extreme programming: The state of research. *Journal of Database Management (JDM), 16*(4), 88-100. doi:10.4018/jdm.2005100105

Alqudah, M., & Razali, R. (2016). A review of scaling agile methods in large software development.*International Journal on Advanced Science, Engineering and Information Technology, 6*(6), 828-837. doi:10.18517/ijaseit.6.6.1374

Barry Boehm. (2002). Get ready for agile methods, with care.*Computer, 35*(1), 64.

BECK, K., BEEDLE, M., BENNEKUM, A. V., COCKBURN, A., CUNNINGHAM, W., FOWLER, M., GRENNING, J., HIGHSMITH, J., HUNT, A., JEFFRIES, R., KERN, J., MARICK, B., MARTIN, R. C., MELLOR, S., SCHWABER, K., SUTHERLAND, J. AND THOMAS, D.  
Manifesto for agile software development. Retrieved from <https://agilemanifesto.org/>

Blotner, J. (Nov 4, 2002). Agile techniques to avoid firefighting at a start-up. Paper presented at the ff. doi:10.1145/604251.604253 Retrieved from <http://dl.acm.org/citation.cfm?id=604253>

Dikert, K., Paasivaara, M., & Lassenius, C. (2016). Challenges and success factors for large-scale agile transformations: A systematic literature review.*The Journal of Systems & Software, 119*, 87-108. doi:10.1016/j.jss.2016.06.013

Eric Ries. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*Crown Business. USA: Crown.

Erickson, J., Lyytinen, K., & Siau, K. (2005). Agile modeling, agile software development, and extreme programming: The state of research.*Journal of Database Management (JDM), 16*(4), 88-100. doi:10.4018/jdm.2005100105

Paasivaara, M. (May 20, 2017). Adopting SAFe to scale agile in a globally distributed organization. Paper presented at the 36-40. doi:10.1109/ICGSE.2017.15 Retrieved from <http://dl.acm.org/citation.cfm?id=3101395>

Scaling agile with tribes, squads, chapters & guilds. Paper presented at the Retrieved from <http://www.bcs.org/content/conWebDoc/49927>

Tuan, N., & Thang, H. (Dec 5, 2013). Combining maturity with agility. Paper presented at the 267-274. doi:10.1145/2542050.2542072 Retrieved from <http://dl.acm.org/citation.cfm?id=2542072>

# Appendix A: Interview Outline