

# PROCESS STREAMLINING OF A SOFTWARE DEVELOPMENT TEAM IN A STARTUP BASED ON PROJECT MANAGEMENT AND AGILE METHODOLOGIES

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## ABSTRACT

Software process is an effective tool for software companies to answer to delicacies of the software production while minimizing the costly risks badly executed steps of software production result in. Especially in dynamic and risk oriented companies such as startups, who are operating in specific, limited conditions while trying not to reflect them on the product's quality. Software process improvement a method which can provide startups with stability and process' efficiency. Many argues that software process improvement is too rigid for small companies with limited resources. This thesis, however, combines established software process improvement methods, which provide framework and evaluation metrics, with modern trends in software development – agile methodology in the way it can be applied an effective application on a startup. Startup model of company as it is also an emerging, rising trend in software companies. On the top of that, this thesis provides a step by step process improvement using the aforementioned tools, which can serve as a guideline for further implementations.

## HYPOTHESES and RESEARCH QUESTIONS

*H: A SPI model can be used to streamline processes in a startup company if used with appropriate and tailored agile and project management methods.*

Partial hypotheses:

*H1: Startup developers have an integral role in software development and their insights are crucial in software process assessment.*

*RQ1: What are the differences in software process evaluation between developers and business?*

*H2: With limited resources, startup companies have to tailor established models and practices to streamline their process without big investments.*

*RQ 2: What are the tools to minimize financial investments needed for SPI?*

*H3: A business model of researched startup defines which tools for software improvement can be used in the process.*

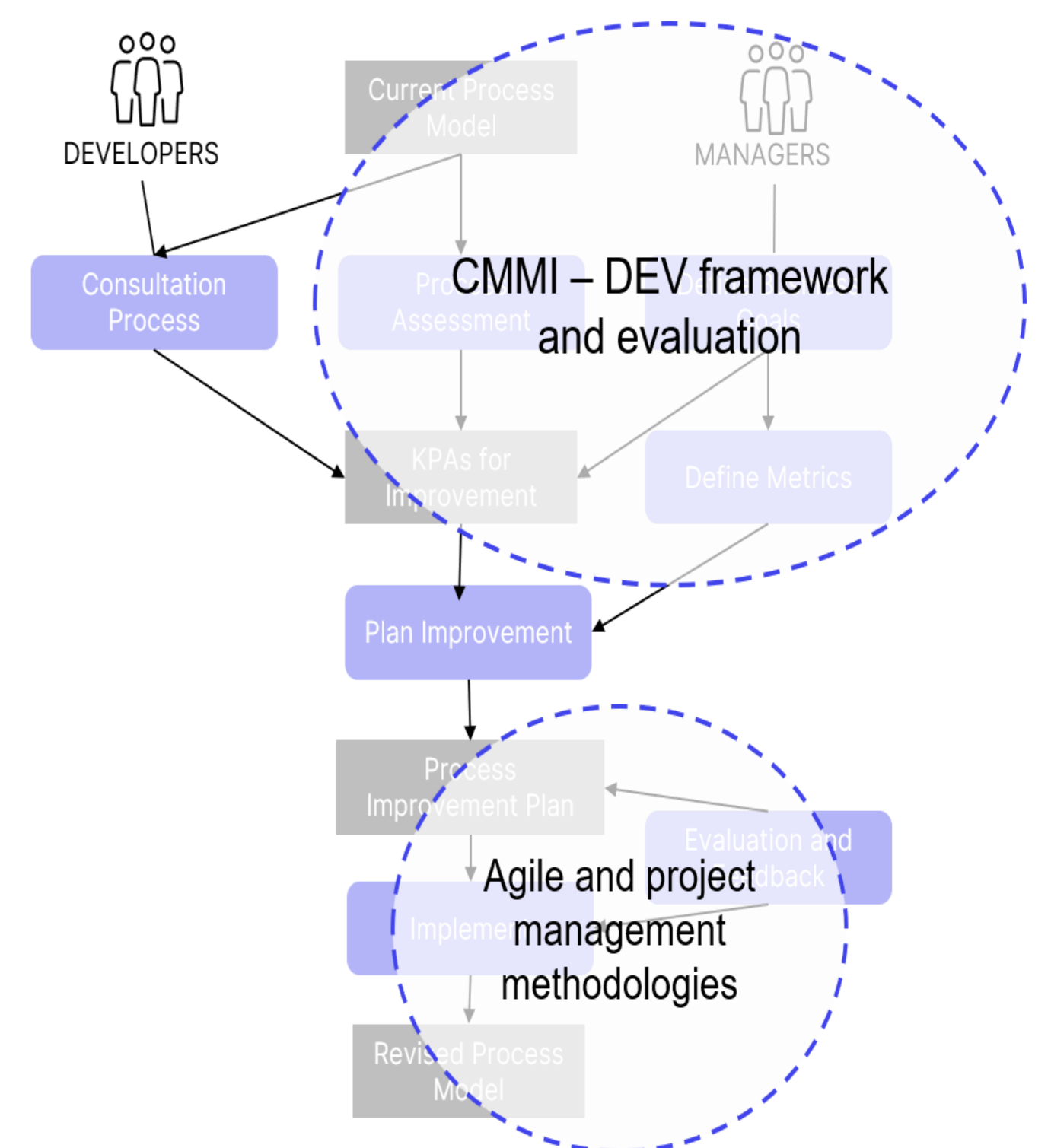
*R3: How do the contextual factors of an organization influence software processes in a company?*

## METHODOLOGICAL FRAMEWORK

Instrumental quantitative case study using observational and empirical findings based on these methodologies:

- Adjusted PRISMS model
- CMMI – DEV model
- Agile methodology
- Project management tools

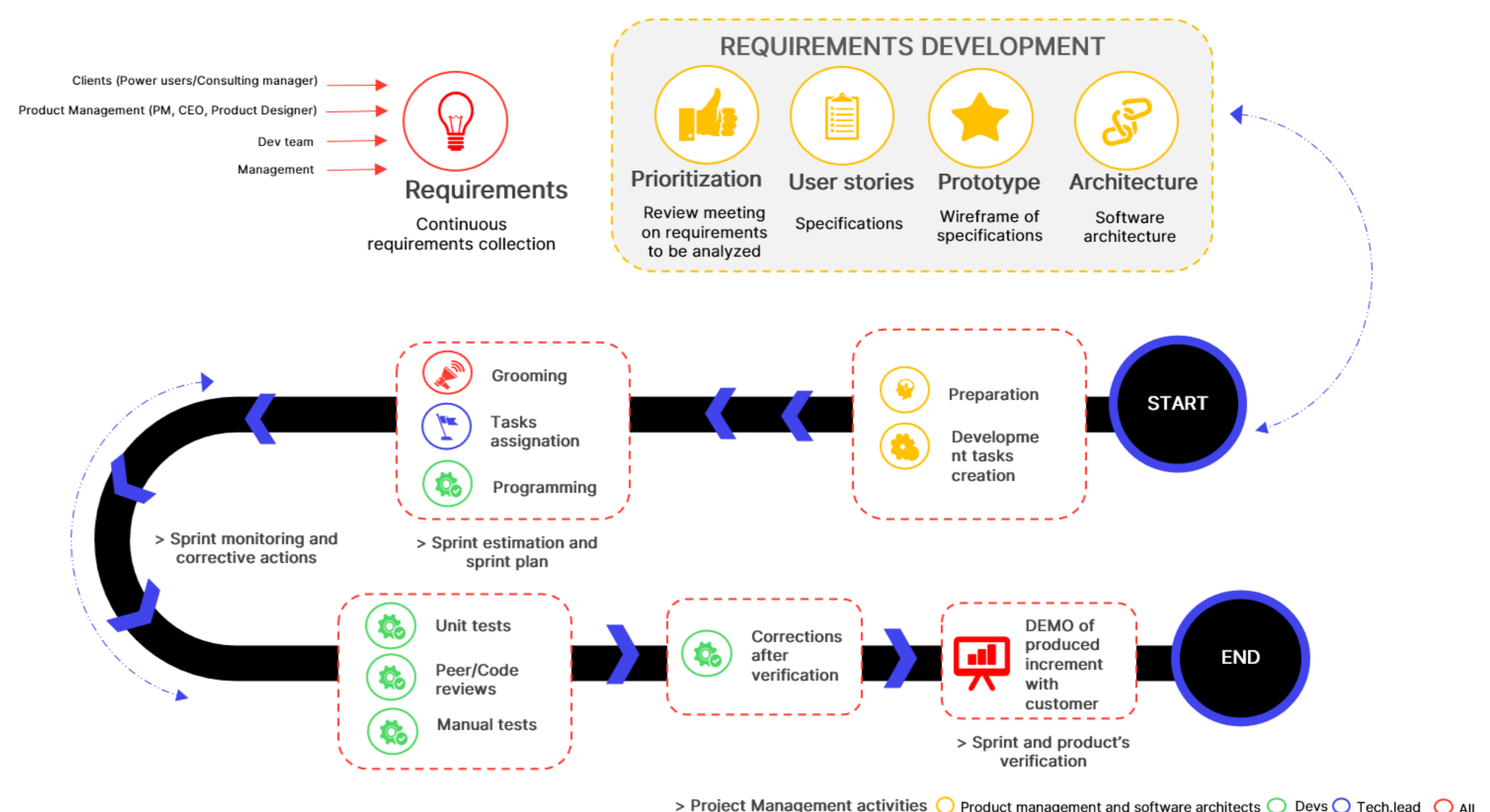
Research conducted on a technology startup operating on the Czech market



## KEY FINDINGS

1. Startups unique specifics can utilize established models with customization and combination of the methods
2. Dynamic environments of startup included new improvements and practices much faster than expected
3. Institutionalization of these practices can, in some cases, show impediments due financial limitations of a startup

## Revised process model



> Project Management activities ○ Product management and software architects ● Devs ○ Tech.lead ○ All