

Chapter 5 - Recommendations and Conclusion

5.1 Introduction

This concluding chapter brings out a summary of the hypothesis testing and draws conclusions based on the findings. Known limitations are also discussed, and recommendations are presented for practitioners.

5.2 Qualitative data analysis

During semi-structured interviews conducted initially, it was found that cross-functional teams are a challenge in Sri Lanka as there are different perceptions about some job functions. As an example, a Project Director commented that they find developers voicing reluctance when assigned a quality assurance task, as they have already set the mind to do only development work, irrespective of what the methodology suggests. It was also found that with the daily reporting of Scrum, some developers felt as if they were being micro-managed.

Considering the level of Scrum adherence in Sri Lanka, as Scrum is a recent methodology which has been adopted by just a few companies, they still use the methodologies which have been practiced before Scrum along with some of the Scrum practices. This probably explains the low rates of Scrum adherence (refer section 4.7.8). This means that they are still in the transition period from traditional methodologies to Scrum, and probably means that some projects are still successful, even with low levels of Scrum adherence.

Below is a list of such ‘hybrid’ approaches found.

5.2.1 Daily Scrum conducted on Google Wave

One organization engaged in distributed software development in Sri Lanka and Europe had been using Google Wave for conducting the daily Scrum, instead of using video or voice conferencing. Even though Scrum espouses the daily Scrum for its high-bandwidth communication, this organization claimed that Google Wave was an effective tool when coupled with proper coordination (e.g.: strict time-boxing) by the ScrumMaster.

5.2.2 A dynamic Sprint Backlog

A team engaged in both development and maintenance tasks used a dynamically changing Sprint Backlog to accommodate fixing bugs in a timely manner. This goes against the general Scrum practice, where the team commits to a highest priority subset from the Product Backlog which then becomes the Sprint Backlog, and does not change in the middle of the Sprint.

5.2.3 No task estimation at Sprint planning meeting

In a research oriented team, developers tended to perform task breakdown and estimation largely by themselves once they had begun a user story. This too differs from the general Scrum practice of having the team perform task breakdown and time estimation. This might also be the result of a ‘hardcore coding’ team that see the detailed planning level as a waste of time.

5.3 Research limitations

Based on the data collected from the survey, three limitations were identified in this research. The first limitation is the possible bias towards some demographic groups and it is shown in the demographic statistics that the following groups are significantly over represented.

- Number of employees in the organization: 1 – 100 employees
- Number of employees in software development: 51 – 100 employees
- Scrum in practice in the organization: 2 - 5 years
- Gender: Male
- Education level: MSc, MBA or other graduate
- Job position: Executive
- Job designation: Team leader/ Technical leader/Architect

These over-representations were however identified in statistical tests that assumed an equal distribution of each level within each variable. It is possible though that a similar bias exists within the Sri Lankan software industry, and so future studies should take this in to account, and so this might not be a real limitation in this research.

The second limitation is that the study was meant for successful and unsuccessful projects, but after performing a preliminary round of pilot testing, the questions were rephrased to refer to Sprints completed instead of projects completed, as there are many who had just started with Scrum and had not completed any projects using Scrum by the time they took the survey.

Lastly, the sample size is somewhat small but it was accepted as the population is not large. The results could be more representative of the software industry in Sri Lanka if there were more responses.

5.4 Future work

This research clearly shows that the level of adherence of Scrum does not correlate with the effectiveness of a project. This study has however been purely correlational, so it is too premature to argue about causality in this regard. Exploring whether changes in adherence to Scrum standards lead to changes in effectiveness would be an interesting direct extension of this research.

An interesting future study could be about the various augmentations made to Scrum, the reasons for making those changes, and their effectiveness.

5.5 Conclusion

To our knowledge the adoption of Scrum standards in Sri Lanka is not addressed in the existing literature. Therefore this research was conducted to fill the knowledge gap to some extent, for the benefit of the Sri Lankan software industry. This research study set out to design a survey to explore the factors that have an impact on the effectiveness of a project using quantitative methods. The data was collected from six companies of various sizes and provided enough empirical information for statistical analysis to arrive at a number of conclusions.

The main finding of this research is the relationship with the factors identified and the effectiveness of Scrum in project management. The organizations that want to adopt Scrum and the project managers who wish to try Scrum as a project management methodology should consider the above significant factors, namely, strong management support, Agile-friendly organizational and team environments, a capable

team, strong customer involvement, Agile project management process and having an effective delivery strategy to make the project a success.

This thesis also shows that the level of Scrum adherence does not have a significant correlation with effectiveness of projects. Even in the interviews conducted, some professionals from at least two organizations commented that they do not use Scrum as it is but they use a mixture of Agile concepts. The author feels that these hybrid approaches explained previously contribute to this surprising finding.

The author also feels that Scrum is mainly about making things more visible and measurable. It makes requirements more visible, progress more measurable and impedances more visible as it is a management framework but does not define engineering practices. The author suggests that these relatively subtle changes are already leading to improvements in projects, and that in time, with organizations embracing Agile principles more completely, higher levels of effectiveness can be expected.



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