PROPOSAL FOR RESEARCH METHODOLOGY

PA2512: RESEARCH METHODOLOGY

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Thesis	Tentative Title	Proposal for Software Engineers – Work from home
	Classification	Project management techniques, Project staffing
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Introduction

Digital technologies have enabled work activities to be spread among the workers at different locations effectively [1].Telecommuting is such a work arrangement in which the employee works outside the office, often working from home. These decentralised arrangements lead to reduced office space, which in-turn reduces office costs for the organisation [2]. They help the employees to improve their work flexibility by adjusting their schedule to meet their household and family needs. They also improve employees' work performance [3]. Telecommuting is also said to alter the relationship between family and work spheres, and also affects stress and occupational health [4].

Working from home is a growing trend among the current employees and the new job seekers. A study suggests that around 30 to 50% of them would prefer to work from home if given the chance. It also shows that around 9% of the current employees are given a chance to work from home if they want [5]. But there is no literature suggesting how the organisation gives them the opportunity to work from home.

Adams et al., and Judge et al., show how the work-family conflict negatively impacts job satisfaction and performance [6][7]. Harpaz lists several advantages and disadvantages of telecommuting both to the organisation and to the employee [8]. Gajendran, et al., shows how telecommuting impacts several factors of an individual like his performance, job satisfaction, stress, career prospects, etc.[1] Sanchez et al, discusses about the effect of telecommuting on firm's performance, but their main focus is on the work flexibility gained due to telecommuting [9]. But, clearly their focus is not on software engineering professionals who work from home. Furthermore, we could not find any research which suggests the factors that

render these advantages and disadvantages, like communication issues, work environment, lack of professional support, etc. There are several more factors and threats that potentially influence the project's progress. Therefore, a research needs to be performed on 'Software engineers-work from home' environment. This paper proposes the same.

Aims and Objectives

The main aim of this project is, "To determine the nature of work from home environment and how does it benefit an organisation in software industry."

Based on this aim, several objectives have been determined and are presented below:

- To identify the benefits and drawbacks of work from home environment in software industry.
- To mitigate the drawbacks (or the problems or the issues) caused due to work from home environment in software industry.
- To explore the scenarios that explain when and how to provide work from home environment for professionals working on a software project.

Research Questions

The following research questions are framed based on the objectives determined earlier.

RQ 1. What are the benefits and drawbacks of work from home environment in software industry?

RQ 2. How can we mitigate the drawbacks (or the problems or the issues) caused due to work from home environment in software industry?

RQ 3. What are the best case scenarios in which the project team can be operated in a work from home environment?

Research Method

In our project, we want to perform a systematic literature review in order to obtain in-depth knowledge of the current work from home or telecommuting practices. By performing the SLR, we believe that we can obtain an answer to our first research question. Also we may obtain some methods or processes to mitigate these drawbacks. Kitchenham's guidelines will be followed when performing the SLR [10]. Second research question will be answered by extracting and analysing the obtained data from the study and also by performing structured interviews. Structured interviews are performed with experienced project managers and software professionals. There is no research available on the best case scenarios in which a project team can be operated from work from home environment. The third research question can be answered purely by interviewing experienced project managers and software professionals. So, it is clear that structured interviews will help answering the second and third research questions.

Expected Outcomes

Since, the project involves a systematic literature review and interviews, the expected outcome will be in the form of guidelines and checklists. The guidelines will list several benefits and drawbacks to the organisation and to the individual. These guidelines will also help to mitigate the drawbacks caused due to telecommuting. The checklists and the guidelines will help the organisation or individual to make the most out of the telecommuting practice. Furthermore, the best case scenarios and the best practices when implementing work from home environment can be presented.

Time and Activity Plan

- 20140210: Started writing proposal individually
- 20140217: Proposal comparison and changes
- 20140121: Proposal submission
- 20140222: Conducting Systematic literature review
- 20140223: Constructing search string for SLR
- 20140224: Search literatures
- 20140226: Status meeting to remove duplicates
- 20140301: Final set of literatures
- 20140302: Data extraction and Analysis
- 20140304: Contacting different companies
- 20140306: Randomly selecting individuals for interviews
- 20140307: Interviewing the selected candidates
- 20140311: Analysing the data obtained from the interviews
- 20140312: Final Documentation
- 20140314: Final Submission

Risk Management

- **Limited Literature:** Based on the conducted systematic literature review, we found that there is insufficient research on this topic. In addition to this, we are unable to access some of the existing literature. The impact of this risk is very high. In order to overcome this risk we plan to order these literatures through Libris if we feel that they are useful for our research.
- **Time Constraint:** This proposal is for the Research Methodology course and hence only for a time period of one month. Hence we have to reduce the scope of our project by reducing the number of interviews.
- **Sample Selection:** We have to be careful while selecting the employees for the interviews. We will try to randomly select some individuals from several age groups, countries, organisations, disciplines. If we fail to perform this selection properly, the results of the research may get biased towards certain category of people.

References

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