

# **Supplementary Material**

## **How Agile Teams Make Self-Assignment Work: A Grounded Theory Study**

**Zainab Masood . Rashina Hoda . Kelly Blincoe**

The first part of this document (Appendix A) presents the participants information sheets and the consent forms used for this research study. The second part of the document (Appendix B) presents the interview guides for Phase1 and 2 and the pre-interview questionnaire employed to gather participants' demographic information.

### **APPENDIX A. ETHICS APPROVAL**

#### **PARTICIPANTS INFORMATION SHEETS CONSENT FORMS**



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Auckland, New Zealand

## CONSENT FORM

Software Practitioner

### THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS

Project title: Self-Assignment: Task Allocation Practice in Agile Software Development

Name of Researcher: Dr. Rashina Hoda / Dr. Kelly Blincoe / Zainab Masood

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that I am free to withdraw participation at any time, and to withdraw any data traceable to me up to a specified date (30 days from date of interview).
- I understand that my personal information (name, age group, occupation) may be collected by means of the pre-interview questionnaire and survey.
- I agree/do not agree to the personal information being collected as specified above.
- I agree / do not agree to be audio-recorded.
- I wish / do not wish to have my recordings returned to me.
- I wish / do not wish to receive the summary of findings.
- I understand that a third party who has signed a confidentiality agreement will transcribe the recordings.
- I understand that data will be kept for 6 years, after which they will be destroyed.

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- I wish/ do not wish to request for a copy of the transcript and the opportunity to edit them within a period of time (30 days from date of interview).

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS  
COMMITTEE ON 10-May-2019 FOR THREE YEARS, REFERENCE NUMBER  
022381



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**CONSENT FORM**  
Software Practitioner  
**THIS FORM WILL BE HELD FOR A PERIOD OF 7 YEARS**

Project title: Becoming a Self-Organizing Agile Team

Name of Researcher: Dr. Rashina Hoda / Prof. Robert Amor/ Dr. Kelly Blincoe  
/ Yogeshwar Shastri/ Yanti Andriyani / Zainab Masood

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that I am free to withdraw participation at any time, and to withdraw any data traceable to me up to a specified date (30 days from date of interview).
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- I wish / do not wish to have my tapes returned to me.
- I wish / do not wish to receive the summary of findings.
- I understand that a third party who has signed a confidentiality agreement will transcribe the tapes.
- I understand that data will be kept for 6 years, after which they will be destroyed.

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Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS  
COMMITTEE ON 17th Jan 2012 till 17-01-2019 REFERENCE NUMBER 7867



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## **PARTICIPANT INFORMATION SHEET**

### Software Practitioner

Project title: Self-Assignment: Task Allocation Practice in Agile Software Development

Names of Researchers: Dr. Rashina Hoda, Dr Kelly Blincoe, Zainab Masood

### **Researcher introduction**

Dr. Rashina Hoda is a Senior Lecturer of Software Engineering in the department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

Dr. Kelly Blincoe is a Lecturer of Software Engineering in the department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

Zainab Masood is a PhD candidate in the Department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

### **Project description and invitation**

Self-organizing teams are a fundamental principle of Agile methods. With the increasing popularity of Lean and Agile methods, more and more software teams are faced with the challenge of becoming self-organizing Agile teams. This research aims to explore the process followed by software development teams in order to become self-organizing Agile teams including project management and knowledge management in agile software development. Findings of this research will provide guidance for teams attempting to adopt Agile and become self-organizing as well as highlight the potential pit-falls to avoid in the process.

We invite software practitioners with a minimum of 2 years industrial experience of practicing Agile software development to participate in our research. Call for participation adverts will be posted to Agile user groups online. Upon showing willingness to participate, further information will be given about the project, participant's demographics will be collected and

interview time will be arranged. All data collected will be kept confidential. See 'Anonymity and Confidentiality' section below for details.

### **Project Procedures**

This research uses Qualitative research methods i.e. Grounded theory. Using this method, data will be collected using face-to-face, semi-structured interviews, pre-interview questionnaires, and observation of workplace and practices. The interview will be approximately an hour long and will be audio-recorded and transcribed to assist in analysis. Observations will be approximately 2 hours long and will involve the research observing workplace settings and practices without causing any major disruption to normal mode of work. Photographs of workplaces settings and artefacts may be taken with permission from the participants.

Analysis of the data will involve comparing data from one interview to another in order to identify patterns of common concepts. Further abstraction of data at different levels will lead towards a ground theory which will help explain the task allocation strategies, challenges faced by software practitioners and their solution strategies.

Results from this research will be published for the benefit of the greater practitioner and researcher communities. Identity of the participant will be treated as confidential data and participant confidentiality and anonymity will be maintained in any publications arising out of this research. The data will be published in a manner that does not reveal you as the source. Participation in this research is voluntary.

### **Data storage/retention/destruction/future use**

Data (digital and paper artefacts) will be securely stored at the researcher's office under password protection (for digital artefacts) and under lock and key (for paper artefacts) for a period of 6 years and destroyed thereafter.

Interviews will be audio recorded and transcribed by either the researchers or another transcriber (or both). In case of a third party transcriber, the person will have signed an appropriate confidentiality agreement. You may request for a copy of the transcripts and will be given the opportunity to edit them if you wish within a period of time (30 days from date of interview) after the interview. Observations may include digital photographs of workplace and any other artefact as the participant agrees to share. Reproduction of these photos or artefacts in publications/reports etc. will avoid identification of the individual participant or company.

Your details, details of your company, and all information you share will not be made available to any third parties (except for a transcriber if used.) Your confidentiality and that of your company will be maintained. Any publications

or reports will not mention any specific names or details which make you or your company identifiable.

### **Right to Withdraw from Participation**

You can ask for the recorder to be turned off at any time. You have the right to withdraw from participation at any time up to 30 days after the interview without giving a reason.

### **Anonymity and Confidentiality**

All materials collected will be stored in a confidential way and will be destroyed at the completion of the research. Personal information (name, age group, occupation) collected by means of the pre-interview questionnaires will be securely stored using password protected folders with restricted access (if collected electronically) and under lock and key (if data collected on paper). Personal data of the participants shall only be accessible by the concerned researchers. The researchers will keep the participants' identity confidential. The audio recordings will be stripped of any personal information before being sent to the transcriber. Any papers published as a result of the study will not identify the participants, company or its staff. As a general practice of ethics approval, we will need the written consent of the interviewee to be interviewed. A consent form to the same effect is attached herewith.

### **Contact Details and Approval Wording**

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For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of Research Strategy and Integrity, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 ext. 83711. Email: [humanethics@auckland.ac.nz](mailto:humanethics@auckland.ac.nz)

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 10-May-2019 FOR THREE YEARS, REFERENCE NUMBER 022381



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## **PARTICIPANT INFORMATION SHEET**

### Software Practitioner

Project title: Becoming a Self-Organizing Agile Team

Names of Researchers: Dr. Rashina Hoda, Prof. Robert Amor, Dr Kelly Blincoe, Yogeshwar Shastri, Yanti Andriyani, Zainab Masood

### **Researcher introduction**

Dr. Rashina Hoda is a Lecturer of Software Engineering in the department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

Prof. Robert Amor is Head of the Department of Computer Science at the University of Auckland.

Yogeshwar Shastri is a PhD candidate in the Department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

Yanti Andriyani is a PhD candidate in the Department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

Zainab Masood is a PhD candidate in the Department of Electrical and Computer Engineering at The University of Auckland, New Zealand.

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We invite software practitioners with a minimum of 2 years industrial experience of practicing Agile software development to participate in our research. Call for participation adverts will be posted to Agile user groups online. If you volunteer to participate, you will be given further information about the project and asked to arrange an interview time. All data collected will be kept confidential. See 'Anonymity and Confidentiality' section below for details.

### **Project Procedures**

This research uses Qualitative and mixed research methods e.g. Grounded theory, case studies etc. Using this method, data will be collected using face-to-face, semi-structured interviews, pre-interview questionnaires, surveys and observation of workplace and practices. The interview will be approximately an hour long and will be audio-recorded and transcribed to assist in analysis. Observations will be approximately 2 hours long and will involve the research observing workplace settings and practices without causing any major disruption to normal mode of work. Photographs of workplaces settings and artefacts may be taken with permission from the participants.

Analysis of the data will involve comparing data from one interview to another in order to identify patterns of common concepts. Further abstraction of data at different levels will lead towards a ground theory which will help explain the main challenges faced by software practitioners and their solution strategies.

Results from this research will be published for the benefit of the greater practitioner and researcher communities. Participant confidentiality and anonymity will be maintained in any publications arising out of this research. The data will be published in a manner that does not reveal you as the source. Participation in this research is voluntary.

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Your details, details of your company, and all information you share will not be made available to any third parties (except for a transcriber if used.) Your confidentiality and that of your company will be maintained. Any publications

or reports will not mention any specific names or details which make you or your company identifiable.

### **Right to Withdraw from Participation**

You have the right to withdraw from participation at any time up to 30 days after the interview.

### **Anonymity and Confidentiality**

All materials collected will be stored in a confidential way and will be destroyed at the completion of the research. Personal information (name, age group, occupation) collected by means of the pre-interview questionnaires and surveys will be securely stored using password protected folders with restricted access (if collected electronically) and under lock and key (if data collected on paper). Personal data of the participants shall only be accessible by the concerned researchers. The data collected will be kept confidential to the researchers and the transcriber (person type writing the audio interviews). The audio recordings will be stripped of any personal information before being sent to the transcriber. Any papers published as a result of the study will not identify the participants, company or its staff. As a general practice of ethics approval, we will need the written consent of the interviewee to be interviewed. A consent form to the same effect is attached herewith.

### **Contact Details and Approval Wording**

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APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE ON 17<sup>th</sup> Jan 2012 for 7 years, Reference Number 7867

## APPENDIX B.

### INTERVIEW GUIDE (PHASE1)

This interview guide seeks to gather participant's basic and professional information. All the participants are asked the same questions in the same order to cover the first two parts of the guide. The part3 of the interview guide was semi-structured listed questions started a discussion on the task allocation process and practices but provided an opportunity to explore topics relevant to that particular participant or task allocation process followed by them.

Part 1: Demographic Information	
Name	
Email address	
Age Group (select one)	26-30 / 31-35 / 36-40 / 41-45 / 46-50 / 51-55 / 56+
Gender	
Role (select all that apply)	Developer / Tester / Scrum Master / Manager / Business Analyst / Other (please specify):
Total Experience (career total)	Years
Total Experience with agile methods	Years
Total Experience in current company	Years
Software methods used and no. of years used for (career total)	Traditional or Waterfall: Scrum: eXtreme Programming: Lean or Kanban: Other (please specify name):
No. of teams you are currently part of	
No. of projects you are currently part of	
Part 2: Questions about your CURRENT Team and Project (select one if you are on multiple teams and projects)	
Team name (if any)	
Team size (no. of people)	
Team location	
Team structure	
Project name	
Project focus	
Project duration	
Project domain	
Customer location	
How often do you personally interact with your customer	Never / Annually / 2-3 times a year / Monthly / Weekly /
How would you rate the customer involvement on this project	Poor / Average / Good / Excellent
Software method used on this project (select all that apply)	Traditional/ Scrum / XP / Scrum and XP combo / Kanban / Other (please specify):
How long are your iterations	
To what extent approximately do you customize the process to suit your needs	0% - we do not customize / 25% / 50% / 75% / 80% or more
Practices used regularly on this project (select all that apply)	Daily team meeting / Release planning / Iteration planning / Pair programming / Customer demos / Review meetings / Retrospectives. / Others (please specify):
Project management tools (select all that apply)	JIRA / Trello / VersionOne / Rally / ScrumDo / Excel sheets / Post-it Notes / Others (please specify):
Communication tools (select all that apply)	Skype / Facebook / Slack / Chatting / Email / Other video conferencing:
How would you classify your current team?	1: Manager-lead, where manager takes most of the important decisions 2: Somewhat self-organizing 3: Moderately self-organizing 4: Highly self-organizing 5: Very highly, the team takes all project-related decisions independently
Part 3: Task Allocation Practices (on the SAME current team you answered previous questions for)	
In what form does work arrive to your team?	
Who allocates work to your team?	

In what form does work arrive to you (individually)?
When does individual task allocation happen?
How does task allocation happen in your team? Please provide an example.
What is the default or most common task allocation style? Why?
Who helps you the most with task allocation? In what contexts/type of tasks? Seeking help or offered help? How? Why?

## PRE-QUESTIONNAIRE (PHASE2)

This form is intended to gather the basic information of the participant, company, team and the projects through an online google form. We assure details of the participants, their companies, and all other confidential information shared will be kept confidential. The names and details of the participants will not be specified in any of the publications or reports.

Part 1: Personal Information	
Full Name	
Email address	
Age Group (select one)	26-30 / 31-35 / 36-40 / 41-45 / 46-50 / 51-55 / 56+
Gender	
Ethnic Group	New Zealand European/New Zealand Non-European/ Maori/ Asian/ Pacific Peoples/ Middle Eastern/Latin American/African /Other European /Chinese / Japanese/ Korean/ Filipino/ Malaysian / Indian/ Pakistani/ Other Asian
Part 2: General Professional Information	
Total experience in software industry	Years
Total non-agile experience (years)	Years
Non-agile experience in (select all that apply) *	Check all that apply. None /Waterfall/ Spiral/ Other:
Total agile experience (years) *	Years
Experience with agile software methods *	None /Scrum / XP/ Scrum and XP combo/ Kanban/ Crystal / Feature Driven Development/ Dynamic Systems Development Method / Spotify Other: Other (please specify name):
Part 3: Current Company/Project Information	
Current Company Name	
Reference to company e.g. website	
Type of company	Check all that apply. Single Product/ Multiple Products / Consultancy/ Other Services (please specify name):
Job Title (select all that apply) *	Check all that apply. Developer /Tester / Scrum Master /Manager /Business Analyst Other: (please specify name):
Experience in current company	Years
Part 4: Project and Team Information (Please recall ONE current/past project or product where you used self-assignment as a task allocation approach, and which stands out in your experience and use that project/product to answer the following. This selected project will be the basis of our interview conversation)	
Domain of project	Check all that apply. IT Finance & Banking /Transport /Medical / Telecom / Healthcare / Manufacturing Other: (please specify name):
Your role on project	
Was it using Agile or Traditional?	Agile /Traditional / Other: (please specify name):
How long is the team following agile practices	Years
Agile method used:	Check all that apply. None/ Scrum / XP /Scrum-XP/ Combo / Kanban/ Crystal / Other:
Iteration length:	Not applicable/ 1 week/ 2 weeks/ 3 weeks / 4 weeks

Project focus	Check all that apply. Migration, New Development, Software as a service (SAAS), Other: (please specify)
Team Size (Number of people)	
Distribution of team(s)	Check all that apply. Collocated, Distributed Other:
Team Composition Team composition here refers to the technical attributes of people in a team. Specialists have knowledge in a specific area and likely to pick work appropriate to their skill set while generalists have a broad knowledge in various domains.	Check all that apply. Specialists, Generalists, Mixed, Other: (please specify)
Agile practices followed very frequently	1 (Never) / 2 (Rarely) / 3 (Occasionally) / 4 (Frequently) / 5 (Always) Short iteration, sprints Iteration Planning, User Stories, Product Backlog, Sprint backlog, Collective estimation, Daily standup or team meeting, Release planning, Pair programming, Self-assignment, Customer Demos, Review meetings, Scrum or Kanban board, Definition of Done, Retrospectives
When does task allocation (self-assignment) happen in your team?	Check all that apply. During project or release planning (before project starts), During iteration planning (before iteration starts), During the daily team meeting, Tasks can be allocated at any time (during the iteration) Other: (please specify):
In what form does work arrive to you and your team	Check all that apply. Epics, Features, User Stories, Technical Tasks, Other: (please specify)
Rate how often task allocation is done using the following approaches:	<i>1: Never or almost never; 2: Rarely; 3: Occasionally; 4: Frequently; 5: Always</i> Manager-driven task allocation (manager directly allocates tasks to a team member), Manager-assisted task allocation (tasks are allocated to team members with some assistance from the manager), Team-driven task allocation (team discusses and mutually decides who will perform which task), Team-assisted task allocation (team member self-assigns tasks with some assistance from fellow team members), Individual-driven task allocation (tasks are self-assigned independently i.e. selected and managed individually without any assistance from others)

## INTERVIEW GUIDE (PHASE2)

This interview guide is used to facilitate the interviewer and includes semi-structured list of questions to explore various aspects of self-assignment. The first part starts with some example questions to capture interview's opinion on self-assignment in contrast to manager-assignment. Then, setting up a context for self-assignment process and initiating a discussion to understand how self-assignment is practiced, what benefits and problems practitioners face while practicing self-assignment, when they share any problem, then the interviewer dig deeper to know how they work around those problems. These questions are just samples, and varied with what participant shared during the interview. This question list was updated over time.

What are your major responsibilities as per [role mentioned in the pre-interview form]?
In your opinion, is it better to pick up tasks for yourself or for tasks to be assigned by a manager? How?
How does work come to your team?
In what form does work arrive to your team? Can you please elaborate with few examples?
Who allocates work to your team and how?
Who provides the details related to the work to your team?
When are the tasks available to your team?
In what form do you pick the work?
How does self-assignment takes place in your team?
When do you pick/self-assign tasks?
Do you practice self-assignment differently for work items of different nature?
If yes, please illustrate the different strategies followed? If no, illustrate the common strategies?
Are there any other types of tasks that you might have picked? If yes, list with example?



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Do you discuss your tasks with team members for any clarification/ issues/ confusions? When? Any example?
What problems do you (as a developer)/your team (as a manager) face while picking up tasks?
How do you overcome these problems? Please provide examples with how these problems were solved?
Based upon your experience, is self-assignment better than delegation? How? Any Weaknesses?
Any improvements you would suggest improving current process of self-assignment?
When did your team start with self-assignment?
How and when self-assignment was introduced as a practice in your teams?
What benefits of self-assignment have you and your teams experienced?
What are the situations when self-assignment does not take place? Why?
Based on your experience, what leads to a productive self-assignment?
How do you handle situations when people volunteer for similar tasks repeatedly?
How do you cater situations when developers self-assign tasks they aren't skilled to do?
How do you handle self-assignment for new team members?
Does remote location of teams impacts self-assignment process? How?