

# Supplement Material

## Views on Agile Leadership for Software Teams

### A Case Study with Leaders and Non-Leaders

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## 1. Online Supplement

### 1.1. The Interview Guide

This interview is intended to allow the participant to speak freely about the context of his/her team. Let the participant speak freely about his/her work. Try, from time to time, to interpret what the participant is saying in their own words to check that it is correct.

#### A. Introduction

- Could you tell us a bit about yourself (your background, experiences, technologies you master, etc)?
  - How long have you been working in the area?
- What is your current position/function in the team?
- How big is your team?
- How long have you been working in the company/project?
- What are your current tasks?
- Do you identify with any gender (female/male/non-binary) or do you prefer not to answer?

#### B. Examples of follow-up questions on agile methods

- What is your experience with agile methods?
- Which agile method do you use in your team today?
- Could you describe what the agile work process looks like in your team today?
- What would you define as the biggest advantages of agile methods in general?
- Do you have any other aspects that you think we have not covered and that you consider to be an important part of agile working?

#### C. Examples of follow-up questions on leadership

- Do you see leadership as a function of a particular person or as a property of the team?
  - Can you give an example?
- Is there someone in a leadership role in your team?
- Who would you say is in charge of your team?
- What is the leadership format she/he adopts?
- Does the leader usually distribute leadership activities (decision-making, responsibilities) dynamically with the rest of the team?
  - If so, how does this happen in your view?
- Do you believe that the way the leader distributes these responsibilities is balanced among all members or do you notice any differences?
- How do you receive/exercise these leadership activities?
  - Do you have responsibility for a certain "part" of the development process?
- Do you feel free to make decisions and give opinions?
- Does the fact that other team members have more authority to decide certain situations affect the work of the leaders in any way?
- Do you remember any problems that happened in the team regarding the development process?
  - How did the leader act in the face of this problem?
- What are the biggest challenges of leadership in the agile context?
- What would be effective leadership in an agile context?

#### D. Finalization

### **1.2. Observation Script**

#### A. General

- How do people interact day-to-day?
- What are the day-to-day events that occur in the team?
- What meetings take place in the team?

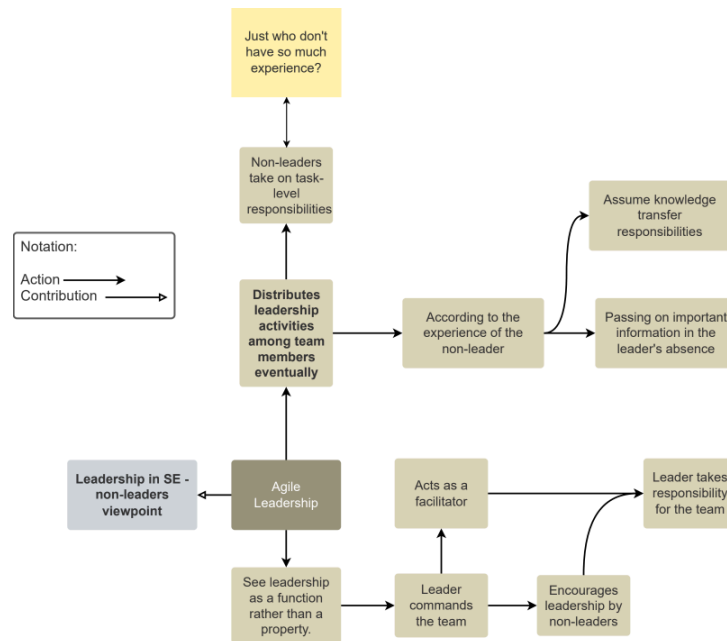
- When do they take place?
- Where do they take place?
- Who participates?
- Who speaks?
- What is the content?
- What is the team climate like?
- Is there friendship between people?
- How do non-leaders relate to leaders?
- How do leaders relate to non-leaders?
- What is people's level of satisfaction?
- What is the behavior of people when they are charged? Why are they charged?
- How do people express their satisfaction in the project?
- Are there signs of self-organization (individual or group)?
- Are there signs of self-management?

B. In the course of the meetings

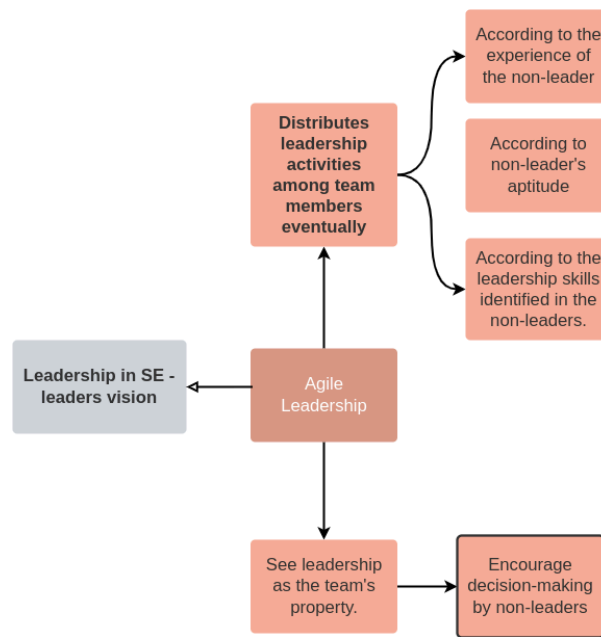
- What is the purpose of the meeting?
- Who conducts the meetings?
- How do people behave during meetings?
- Is the information leveled for everyone?
- Is there submission when leaders speak?
- How do leaders behave when women speak?
  - And when men speak?
- How does communication with the client occur?
- Is there a sharing of leadership activities among non-leaders?
  - How does this sharing occur?
  - Are there differences? What are the differences? Where?
- How do non-leaders refer to leaders?
- And the client?
- Is there tension in communication between leaders and other team members?
- When there is a need for project change, how do people behave?
- Do they show excitement or irritation?
- How do non-leaders usually complain about their work?
  - What about leaders?
- What are these indications?
- How do leaders behave in the face of this?
- Do people have the autonomy to do the work?
- Is there tension when clients are mentioned in meetings?

- What is my opinion of the meeting overall?
- What else would you like to add from what was observed?

### 1.3. Concept Maps - Non-Leaders' view:



### 1.4. Concept Maps - Leaders' view:



## 1.5. Second interviews - Survey for leaders

### Team A:

- In the course of the interviews, the team said that leadership is shared mainly with the more experienced developers.
  - How do you see this sharing of your leadership with others?
  - Regarding the experience of this developer, is this related to him/her having more experience in the technologies/tools used and experience in previous projects? Or is it because of the time he/she has been in the project?
- Developers with leadership profiles are observed for the frequency in which they give opinions and suggestions, for their soft skills related to leadership, etc. Sometimes, in your absence, they are ready to pass on the information and already have a certain period of participating in the project. Can you confirm this statement?
- Do less experienced developers need a certain confirmation/permission from you to give their opinion during the meetings?
- In the retrospective meeting, the rotation between developers to conduct the meeting can be seen as an example of sharing leadership activities. Did developers from the university side ever participate?

- During the observation process, a more experienced developer felt the need to do internal retrospectives. He suggested it and did all the organization, communicating it to his colleagues. Did this meeting (internally) continue to happen?
  - With these meetings, what did you observe as positive and/or negative in the team?
  - Was there a rotation between people to conduct the meeting as well?
- How do you describe yourself as a leader?
- How do you describe your leadership?

#### Team B:

- In the retrospective meeting observed, you recognized one of the senior developers as one of the system owners, giving him full autonomy to exercise decision-making within the team.
  - How do you see the sharing of your leadership with others?
  - About the experience of this developer, is it related to him having more experience in the technologies/tools used, and experience in previous projects? Or would it be because of the time he/she has been in the project?
- How do you describe yourself as a leader?
- How do you describe your leadership?

### 1.6. Nomination and refinement of Themes

Non-leaders' view of agile and effective leadership			
Theme	Category	Subcategory	Quote
Situational leadership	Leadership as a function	Leadership as an individual role	<ul style="list-style-type: none"> <li>● <i>"I see it more as a function assigned to one person. So, I believe that various people in our team have aspects and points of leadership, but I think there has to be a leader." - P5</i></li> <li>● <i>I see it as attributed to a person, from the beginning we knew that (the leader) had this function of manager (...)" - P1</i></li> <li>● <i>We also make some minor decisions, for example, alternative ways of implementing what is being asked (...) when we see that there is a better way</i></li> </ul>

			<p><i>of doing it, and we always have that freedom to decide. But for me, the real leader is (name of leader).” - P6</i></p> <ul style="list-style-type: none"> <li>• <i>“I think I see it mainly as a function given to one person and not really the team.” - P3</i></li> <li>• <i>“Normally, I see decision-making at the architecture level, at the level of how I'm going to do something, it's normally centralized in these people (from the company). (...) And (name of leader) is our leader here on the University side” - P4</i></li> <li>• <i>“In charge of the team, so speaking in an efficient way (leader’s name)” - P2</i></li> </ul>
Dynamic Team Leadership	Leadership as a team property	Colective property	<ul style="list-style-type: none"> <li>• <i>“I particularly think it’s a property of the team because I believe that you don’t necessarily have to be in a managerial position to take some leadership directive. (...) I believe that it wouldn’t necessarily all have to be associated with a managerial figure (...)” - P2</i></li> <li>• <i>I’d say it’s more of a team property within agile. Within Agile, you sometimes have to take on roles that require leadership characteristics. So, for example, in the absence of the leader I sometimes play the midfield leader role. (...) Sometimes you need to put your leadership hat on to get the business moving.” - P8</i></li> </ul>
	Distributes leadership	According to the experience of the non-leader	<ul style="list-style-type: none"> <li>• <i>"Especially when there were problems in the database, because I had experience in this, I was left to decide the pairs, so he [the leader] put me in these stories." - P5</i></li> </ul>

Situational leadership			<ul style="list-style-type: none"> <li>• <i>"Only in some moments that maybe some decisions had a very big weight, taking into account the roles within the team (...) like someone being responsible for a very large refactoring and the person being still undergraduate and not having so much experience on this." - P1</i></li> <li>• <i>"He usually distributes. That's how I think it starts from the understanding that there are people who know more than others..." - P3</i></li> </ul>
		According to team tenure	<ul style="list-style-type: none"> <li>• <i>"(...) I don't think (the leader) would give me a role, (...) Because there are people on the team who have been there longer than I am and can deal with it much better than I can." - P9</i></li> <li>• <i>"There is a difference about part-time (undergraduates) because he (the leader) generally prefers to assign to full-time (graduates) due to availability. So those of us who are full-time have a better view of what's going on" - P6.</i></li> <li>• <i>"When there are new people on the team, he always tries to get them to work in pair programming so that the knowledge can be passed on to these new people. Now, there are new people, and there was a time when two new people joined the team part-time. (...)" - P4</i></li> <li>• <i>"(...) we have people who work half time, people who work full time, so it's not the same (the balancing) because otherwise it would overload someone..." - P3</i></li> </ul>



		Team size matters	<ul style="list-style-type: none"> <li>• “ (...) my team has reached a level where we are so close that when things go wrong, let's put it that way, we get together and solve the problem (...). So our coexistence is very harmonious (...). I feel part of where I am, and I feel good about it” - P8</li> <li>• “I think it's at this time [under pressure] that we see constant conversation and concern for everyone. I think the fact that we're a small team also contributes a lot because we stick together” - P9.</li> </ul>
Dynamic Team Leadership	Leadership as a team property	Collective property	<ul style="list-style-type: none"> <li>• “I particularly think it's a property of the team because I believe that you don't necessarily have to be in a managerial position to take some leadership directive. (...) I believe that it wouldn't necessarily all have to be associated with a managerial figure (...)” - P2</li> <li>• I'd say it's more of a team property within agile. Within Agile, you sometimes have to take on roles that require leadership characteristics. So, for example, in the absence of the leader I sometimes play the midfield leader role. (...) Sometimes you need to put your leadership hat on to get the business moving.” - P8</li> </ul>
<b>Leaders' view of agile and effective leadership</b>			
Dynamic Team Leadership	Leadership as a team property	Collective property	<ul style="list-style-type: none"> <li>• “I see it as ownership. In fact, the vast majority of what I do is discuss, together, we come up with a solution. So (...) we discuss and build the solution. Even from the point of view of taking responsibility, I also</li> </ul>

			<p><i>encourage the staff to do this (...).” - P7.</i></p> <ul style="list-style-type: none"> <li>● <i>“I see it as a way of keeping more than one person aware of the overall vision of the project and aware at a deeper level of detail about what everyone (or most everyone) was working on.” - P7. “It’s not just one position, right? (the leadership). There’s a developer who is also, let’s say, an unnamed technical leader. who is the guy who knows the most about the product.” - P11.</i></li> </ul>
Situational Leadership	Distributes leadership	According to the experience of the non-leader	<ul style="list-style-type: none"> <li>● <i>“...there are people in the team who, regardless of whether they are undergraduates or graduates, already have that degree of taking on a story. (...) Some people in the team don’t yet have this sense of responsibility or commitment.” - P7</i></li> <li>● <i>“I think leadership is a question of skill and maturity, right? You learn about it, you study about it (...)</i></li> </ul>
		According to team tenure	<ul style="list-style-type: none"> <li>● <i>Even one of the project members who had already left (had been on the team for longer) took on the responsibility to take on the role of leader while I was away (...), to try to make life easier for the other members in some development scenarios (...) - P7</i></li> <li>● <i>We have a technical leader... he knows the most about the product (because he's been with the project since the beginning) (...).” - P11</i></li> </ul>
		Leadership aptitudes matters	<ul style="list-style-type: none"> <li>● <i>“More than the developer’s experience in the project or previous projects, what was taken into account was the</i></li> </ul>

1.7.

**Observations' Documents (some examples)**

[General observation + Internal sync meeting \[Team A\]](#)

[General observation + Daily meeting \[Team B\]](#)