

Buying time in software development: a study about padding estimates in the industry

Supplementary materials: Guiding questions and scripts

The current document presents the guiding questions for the observation sessions and the interview scripts for the three rounds of data collection. Notice that the researchers had the freedom to adapt the questions from the interview script to the situation/interviewee.

Guiding questions for the observation

1. How are the estimates produced?
2. How are disagreements resolved to define a final estimate value and to establish commitments?
3. To whom and how are estimates communicated?

Interview script for the first round of interviews

1. How were your tasks for the past two weeks estimated?
2. Do you participate in the estimation of tasks of other team members? If so, what is your role?¹
3. In some moments of the estimation sessions, the team members did not reach an agreement about an estimation value. In such situations, how is the final estimation value defined?
4. In which situations do you add padding to software estimates? Why?
5. Do you know whether estimates are padded after the estimation session with the developers and testers? In which situations does this happen?²
6. In which situations padding estimates is not possible?
7. How are the padded values used during task execution?
8. After the estimates are generated, how are commitments established for the tasks? [Focus on the interaction between the estimates the team develops and the commitments established with the customer]
9. What are the objectives of people involved in estimation?
10. Do these objectives conflict in some situations? If so, how are conflicts handled?
11. In one of the estimation sessions, you stated that you would not be able to defend a certain estimate value? In this case, to whom do you need to defend the estimate?³
12. What makes an estimated value defensible?
13. What happens when you can not defend an estimate?

Interview script for the second round of interviews

1. **Company data:**
 - a. Which is your company's business area?
 - b. How many employees are there?
2. **What is the type of project you work in?**

¹ Question asked for the technical team leader.

² Question asked for software developers.

³ Questions 11 through 13 were asked for one of the team leaders.

- a. Is the client internal or external?
 - b. Which are the types of the contract of your projects? Fixed-price, a time and materials one, or another type?
 - c. Which are the leading software development methods and practices you adopt in your company's typical software project?
- 3. How are software projects/tasks estimated?**
- 4. What happens when there are disagreements during the estimation of projects/tasks?**
- 5. Have you ever had an estimate not accepted [by customers or managers]? If so:**
- a. In which situations?
 - b. How did you deal with this? [Investigate whether they changed their estimates]
- 6. How are commitments established with project customers/stakeholders?**
- 7. Did you pad software estimates somehow? If so:**
- a. In which situations? [investigate in which cases it is not possible to pad estimates]
 - b. Why?
 - c. How do you decide on the size of the padding?
 - d. Who decides about padding?
 - e. Who knows about padding added to the estimates?
 - f. How do you use padding in your tasks?
- 8. If they do not pad estimates:**
- a. Why?