

# WHY DO NEWCOMERS ABANDON OPEN SOURCE SOFTWARE PROJECTS?



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# CONTEXT

“Newcomers are explorers who must orient themselves within an unfamiliar landscape...”

[Degenais et al. 2010]



... and need support on their first steps

B. Degenais, H. Ossher, R.K.E Bellamy, M.P. Robillard and J.P. de Vries, **Moving into a new software project landscape**, in ICSE 2010.

# GOAL

## Research Question

*Does the absence of response, politeness, usefulness or the author of answers influence the retention of newcomers in an open source project?*

## Specific goals:

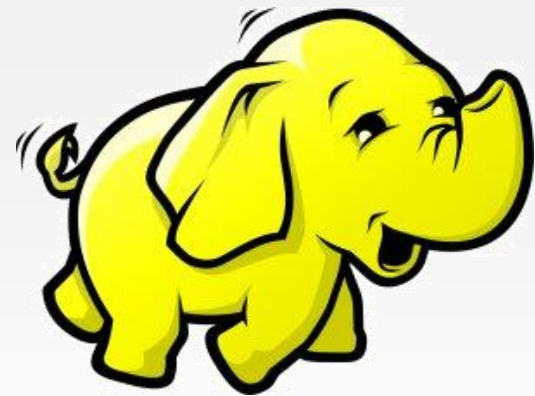
- During newcomers' first interactions with the project
  - check if they receive answers;
  - observe who are the authors of the answers to their questions;
  - classify the answers received by the newcomers.

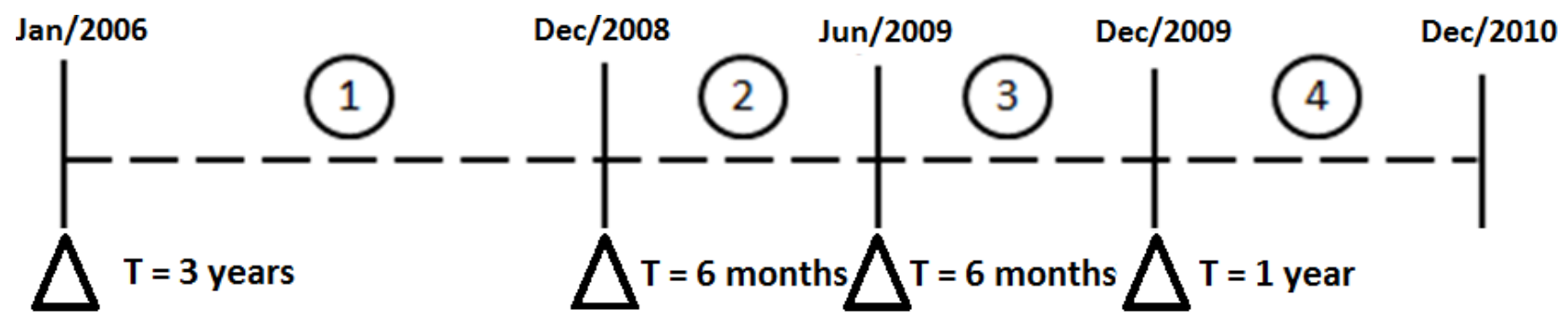
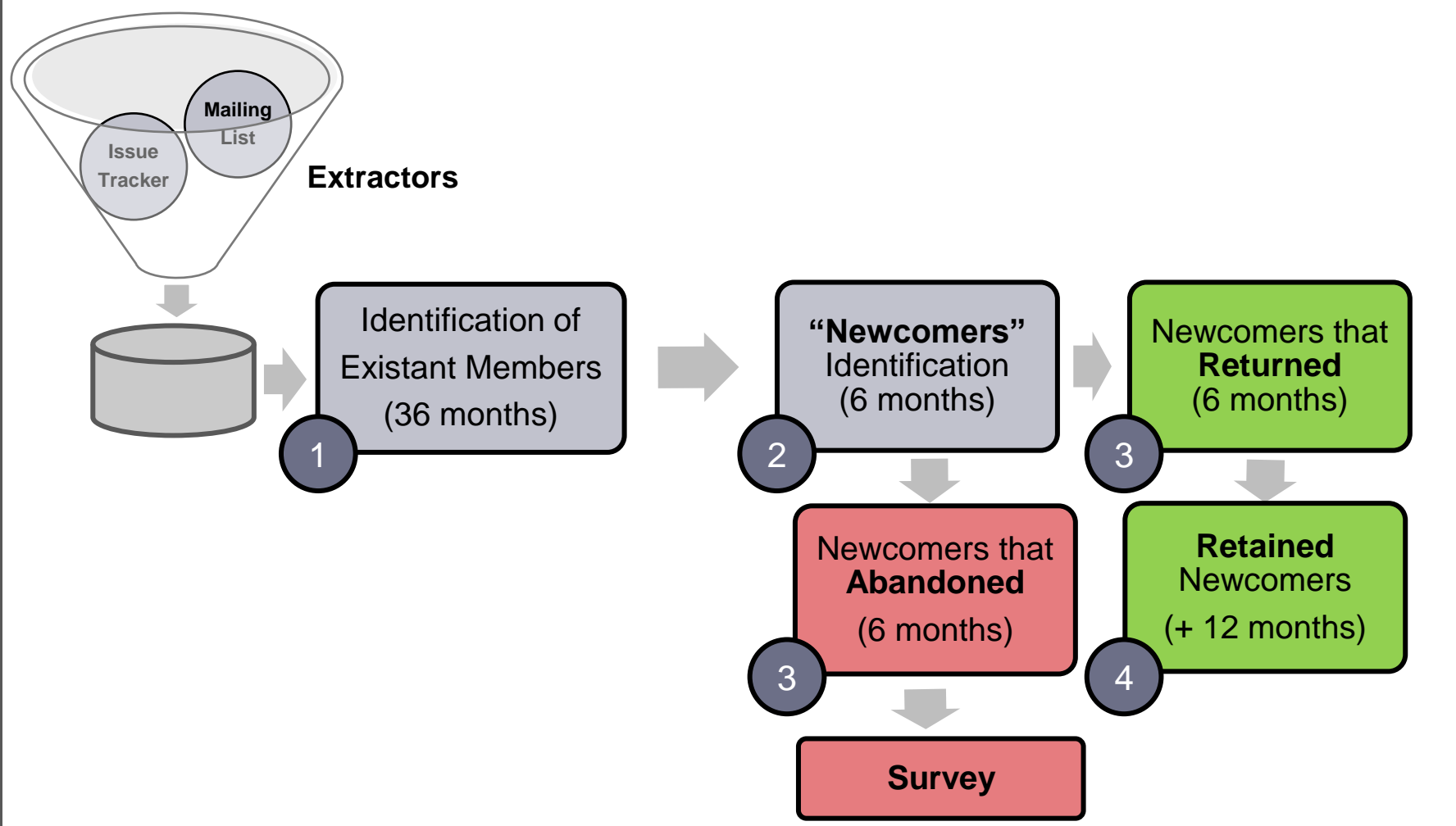
# DATA

## Hadoop Common Project

60 months

- Mailing lists
  - 9285 threads
  - 50128 messages
- Issue tracker discussions (Jira)
  - 7721 issues
  - 76065 comments





# RESULTS (RETENTION)

## Mailing list newcomers

	<i># users</i>	<i>% of existant</i>	<i>% of newcomers</i>
Existant members (interval 1)	677		
Newcomers (interval 2)	67	9.90%	
Remaining (interval 3)	20	2.95%	29.85%
Retained (interval 4)	12	1.77%	17.91%

## Issue tracker newcomers (Jira)

	<i># users</i>	<i>% of existant</i>	<i>% of newcomers</i>
Existant members (interval 1)	483		
Newcomers (interval 2)	127	26.29%	
Remaining (interval 3)	30	6.21%	23.62%
Retained (interval 4)	17	3.52%	13.39%

# SG1: ARE NEWCOMERS ANSWERED?

## Mailing list newcomers

	<i># people</i>	<i>Abandoned</i>	<i>Appear on intervals 3 and 4</i>
<b>Answered</b>	13	11 (84.6%)	2 (15.4%)
<b>Not answered</b>	34	30 (88.2%)	4 (11.8%)

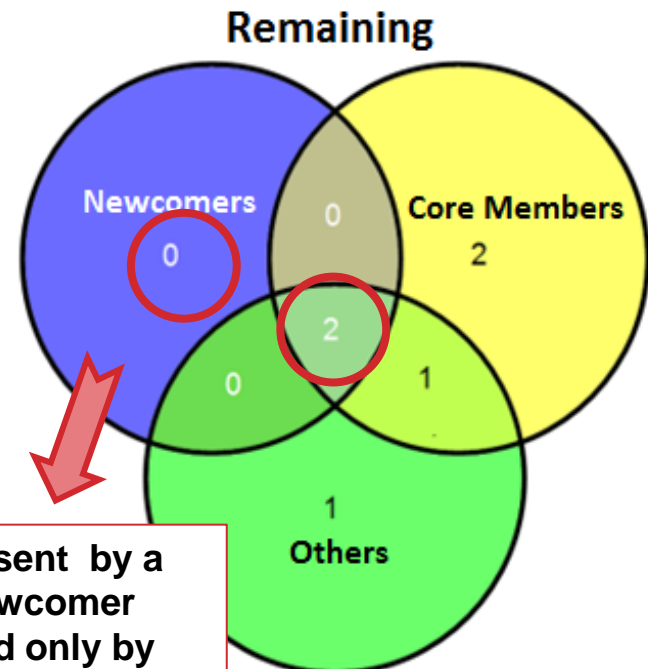
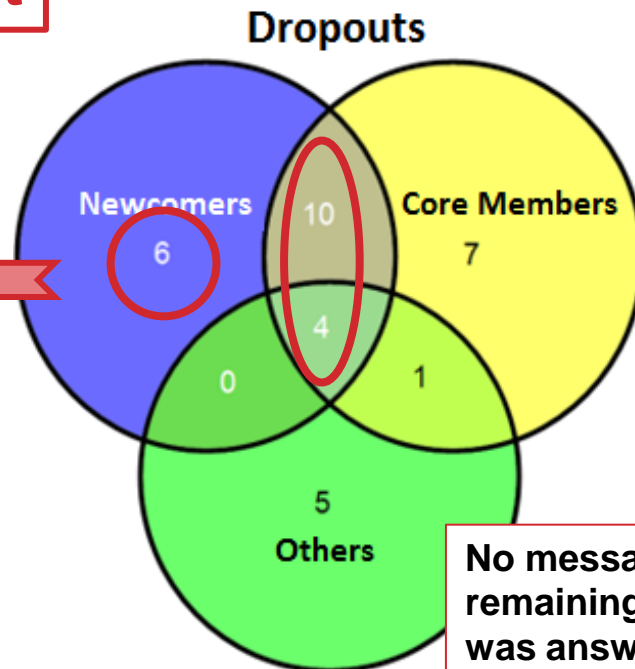
## Issue tracker newcomers (Jira)

	<i># people</i>	<i>Abandoned</i>	<i>Appear on intervals 3 and 4</i>
<b>Not commented</b>	7	6 (85.7%)	1 (14.3%)
<b>Received comments</b>	71	55 (77.5%)	16 (22.5%)

# SG2: WHO ANSWERS NEWCOMERS?

## Mailing list

20 threads triggered by newcomers that abandoned the project had some answer from other newcomer



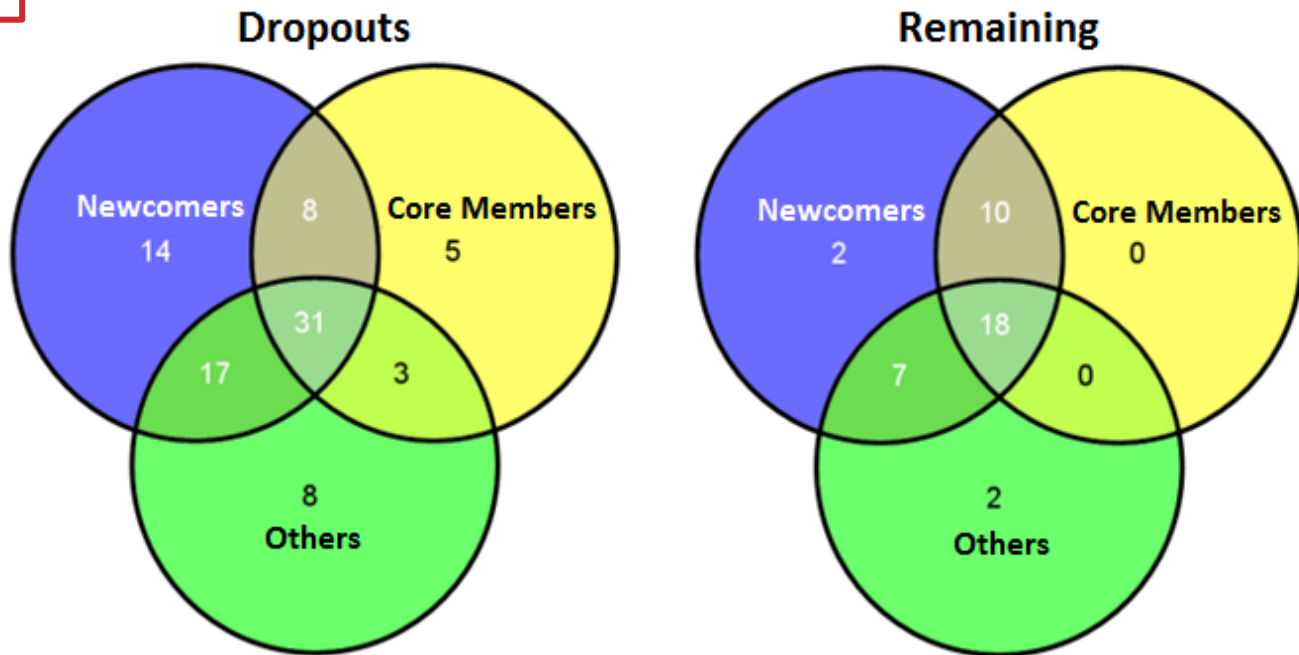
No message sent by a remaining newcomer was answered only by other newcomers.

- There are some hints that the authors of answers influence the newcomers
  - After manual analysis: content of the answers seems to be more relevant



# SG2: WHO ANSWERS NEWCOMERS?

Jira



Very heterogeneous participation

- Discussions are contextualized and focused
- Higher amount of messages exchanged per thread (issue)'

# SG3: WHAT KIND OF ANSWER DO NEWCOMERS RECEIVE?

## Mailing List

<i>Answer type</i>	<i>Left the project</i>	<i>Remained</i>
<b>Useful / On Topic</b>	20	7
<b>Not Useful / Another question</b>	5	0
<b>Not Useful / Offtopic</b>	3	0
<b>Indifferent</b>	1	0
<b>Other</b>	4	0

## Issue tracker

- Answers are in topic, contextualized and bring useful information

# RESULTS – QUESTIONNAIRE

1. *Do you remember sending an email to hadoop-common-dev mailing list?*
2. *At that time, were you interested to keep contributing to Hadoop project?*
  - 2a. *In case you answered YES to question 2, why did you give up?*
  - 2b. *In case you answered NO to question 2, what was the goal of the messages sent to developers list?*
3. *Have you contributed to the project after June 2009?*
4. *Have you contributed to other Open Source project BEFORE 2009?*

	<i>Question 1</i>	<i>Question 2</i>	<i>Question 3</i>	<i>Question 4</i>
<b>Yes</b>	13	<b>11</b>	1	7
<b>No</b>	0	2	12	6

# RESULTS – QUESTIONNAIRE

**2a.** *In case you answered YES to question 2, why did you give up?*

**2b.** *In case you answered NO to question 2, what was the goal of the messages sent to developers list?*

<i>Type of answer</i>	<i>Answer to question 2</i>	
	<i>Yes (2a)</i>	<i>No (2b)</i>
<b>i.</b> The user just wanted to clarify some doubt	0	2
<b>ii.</b> Question not answered or answer did not help	2	0
<b>iii.</b> Lack of help to choose a task	3	0
<b>iv.</b> Not accepted by the Project	1	0
<b>v.</b> Changed focus or company	4	0
<b>vi.</b> Resumed the contributions later	1	0

**“... My issue was how to start contributing... If I could have got some hand holding that might have helped ...”**

**“I got no answer for my question”**

# CONCLUSIONS

***Does the absence of response, politeness, usefulness or the author of answers influence the retention of newcomers in an open source project?***

- ✗ absence of answer
- ✓ *politeness of answers* → *receptiveness (survey)*
- ✓ *usefulness of answer*
- *type of author*
- Initial interactions influence newcomers decision to recontribute to the project
  - “Social skills” are required

# QUESTIONS?



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