

USAGE AND PERCEPTIONS OF AGILE SOFTWARE DEVELOPMENT IN AN INDUSTRIAL CONTEXT

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Agile Development is Spreading



- Variety of Agile methodologies
 - ▣ Scrum, Extreme Programming, Crystal, others

- Research Questions
 - ▣ How is Agile practiced at Microsoft?
 - i.e. What do they do?
 - ▣ How do engineers feel about it?
 - i.e. Do they like it?

- This will be a data-heavy talk.

What did we do?



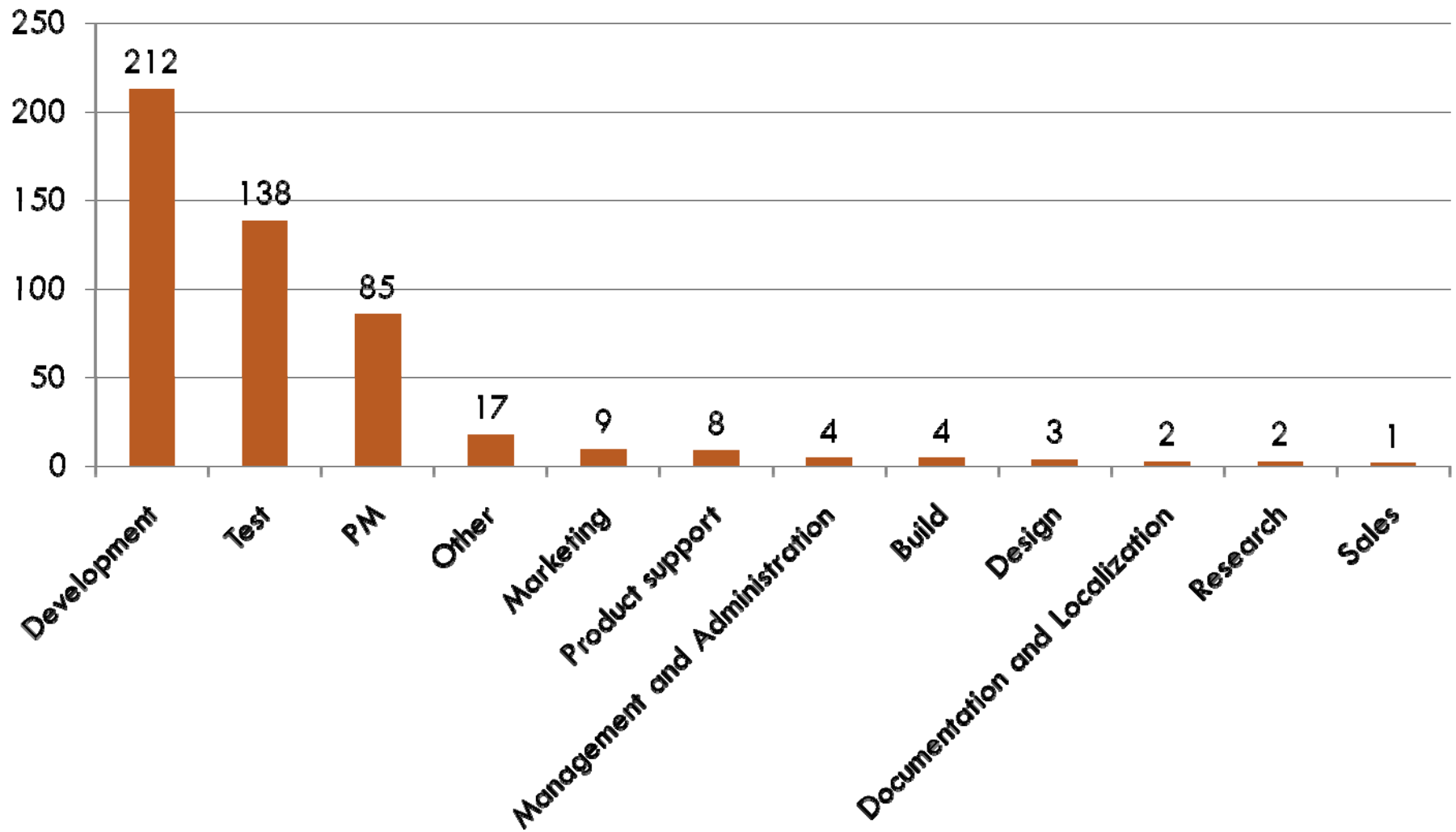
- Survey-based study
 - ▣ Anonymous survey sent to 2821 engineers at Microsoft
 - 10% random sampling of all developers, testers, program managers at Microsoft in October 2006
 - ▣ 487 valid responses
 - 18% developers, 18% testers, 10% program managers
 - ▣ Important topic to Microsoft engineers
 - ▣ We offered raffle for one \$250 MP3 player

Respondent Demographics

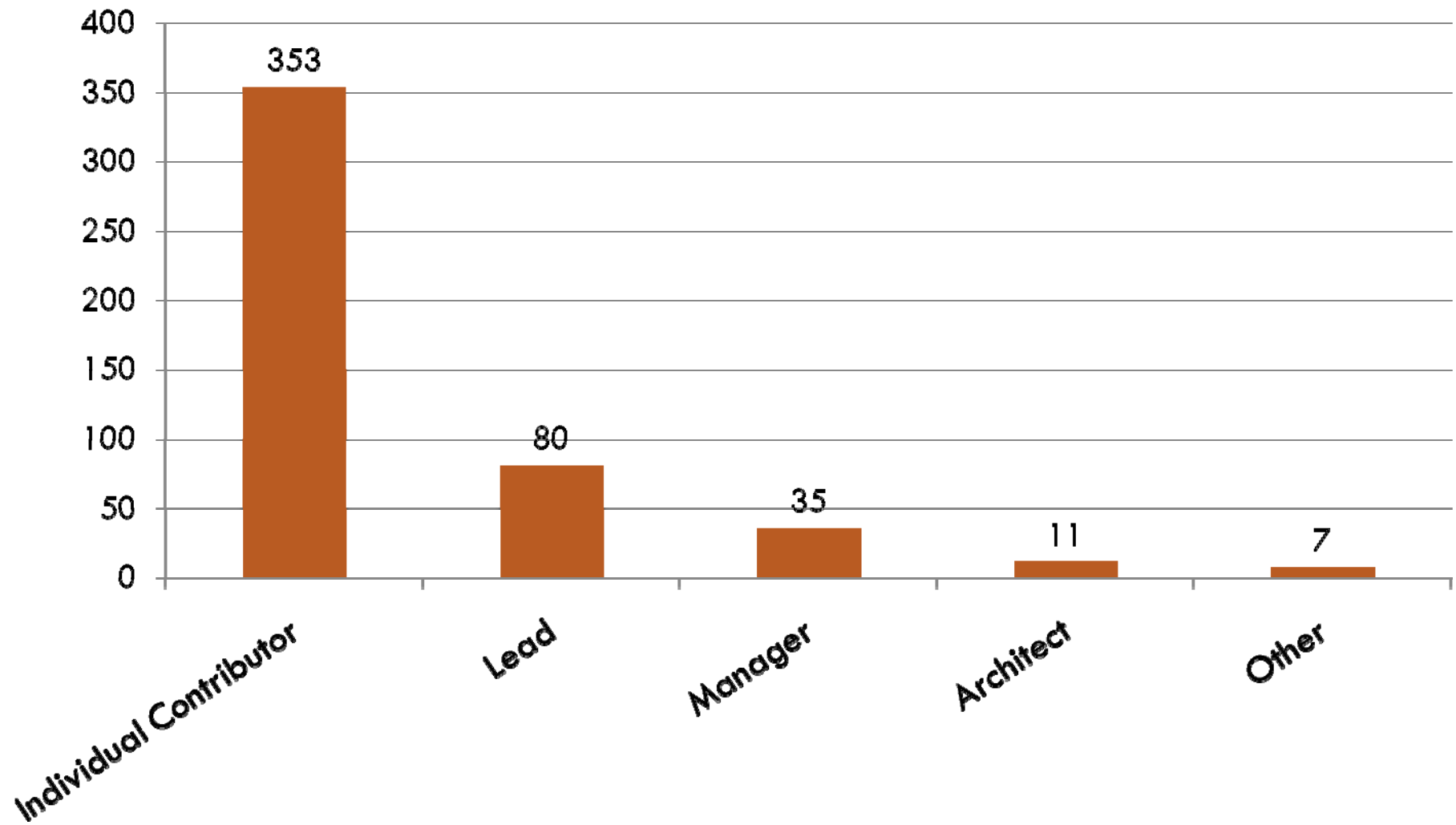


- Average 9.20 years of professional experience
 - SD: 7.06 years
- Average 2.4 years in current product team
 - SD: 2.5 years

Respondent Job Area

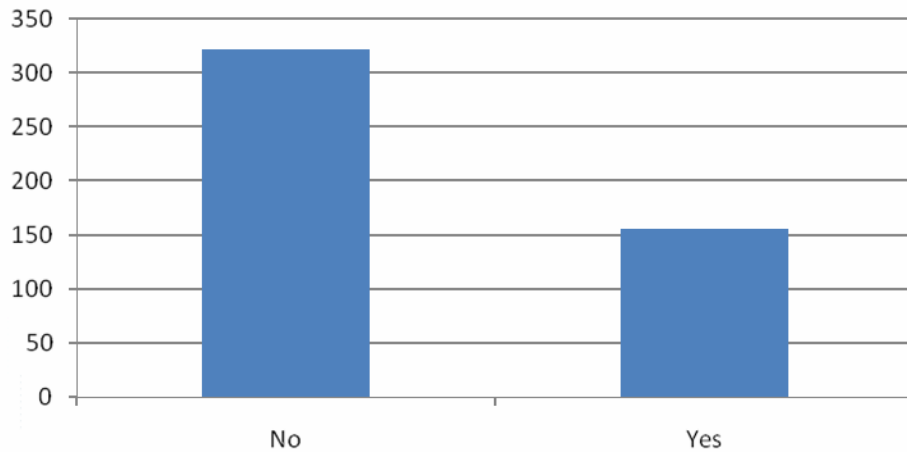


Respondent Job Role

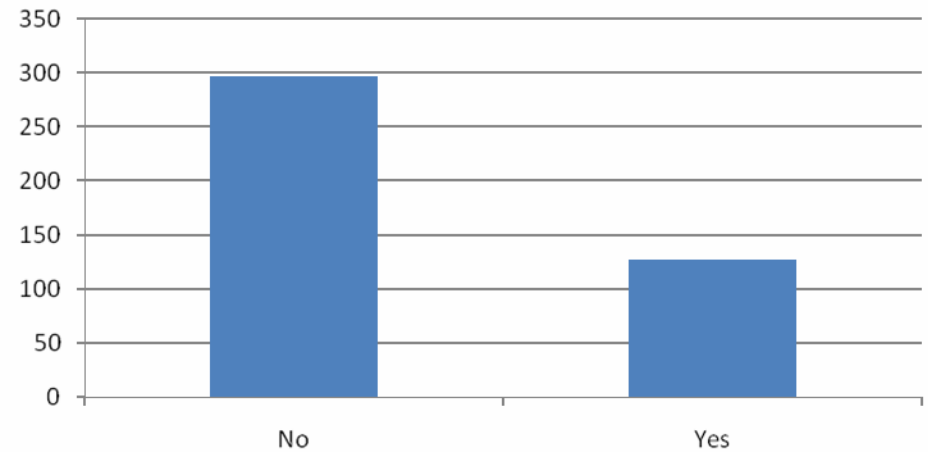


Who uses Agile?

Team Is Using Agile?

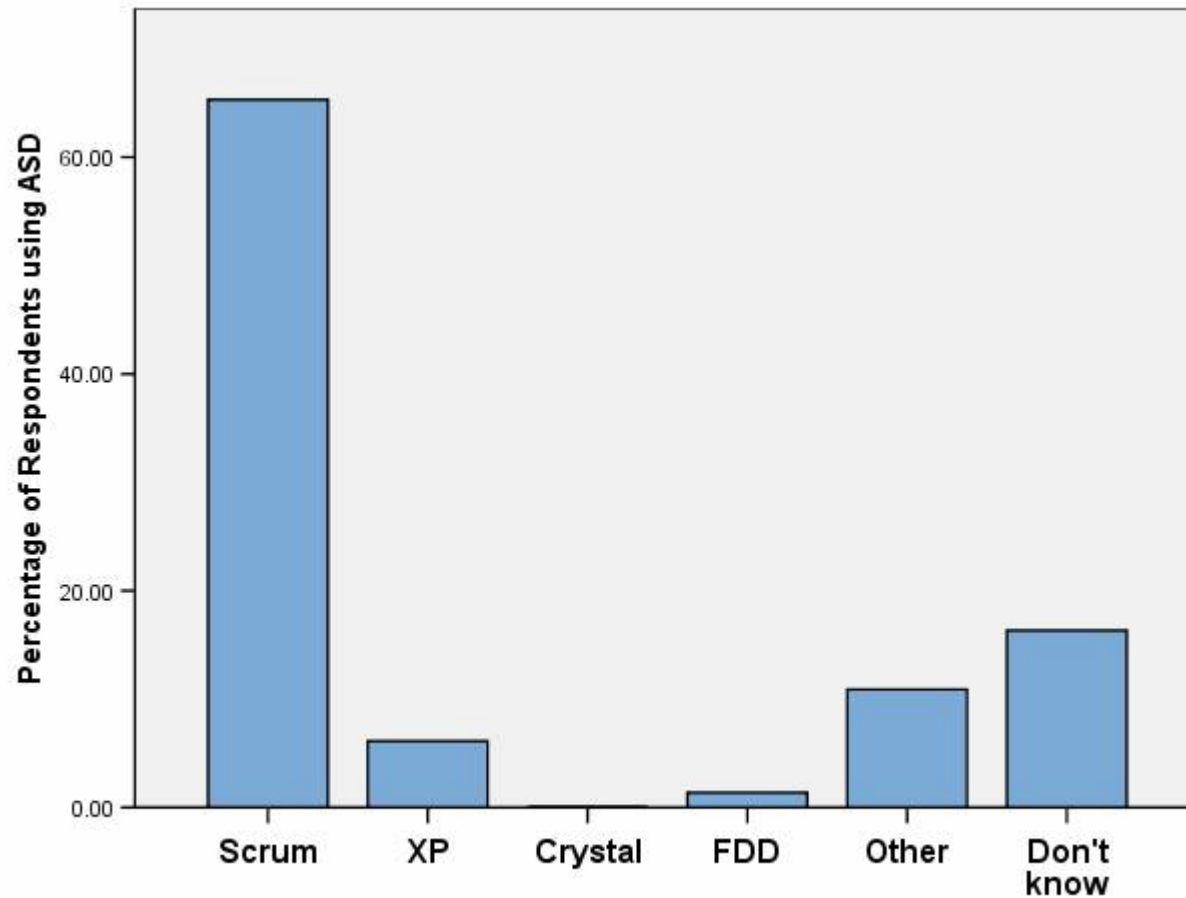


First Version of Product?

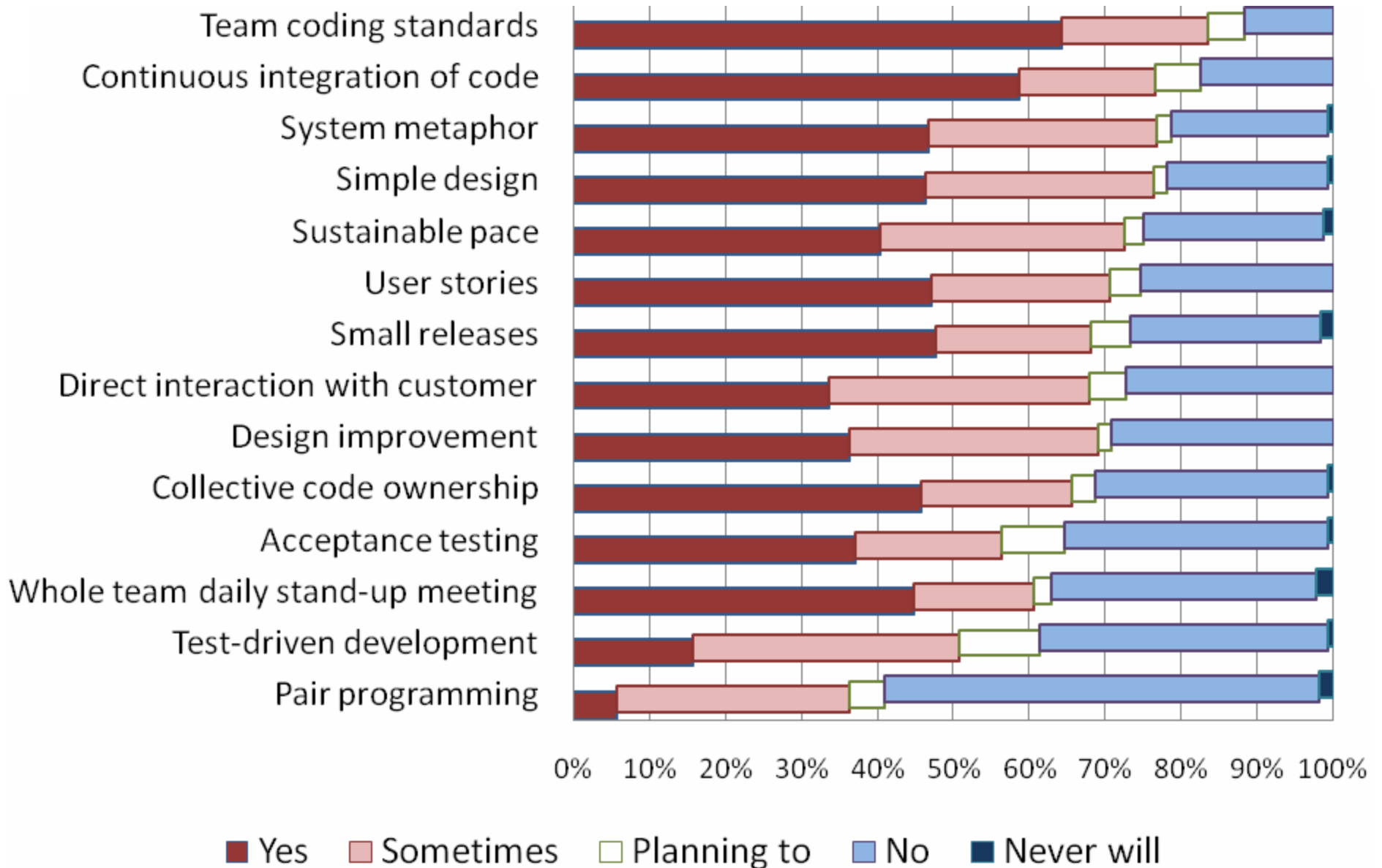


59.6% of Agile users work on legacy (not v1) code

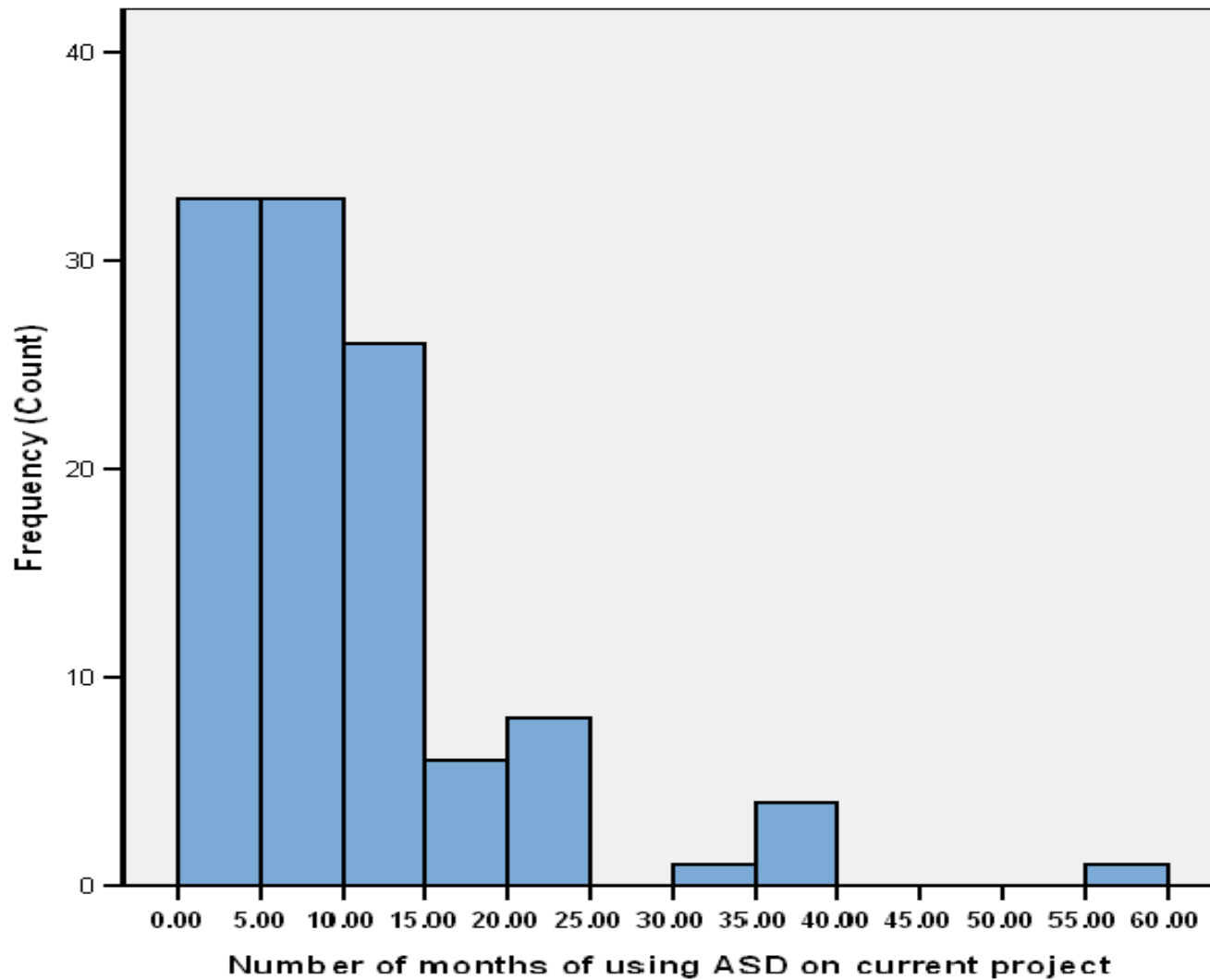
Agile Methodology



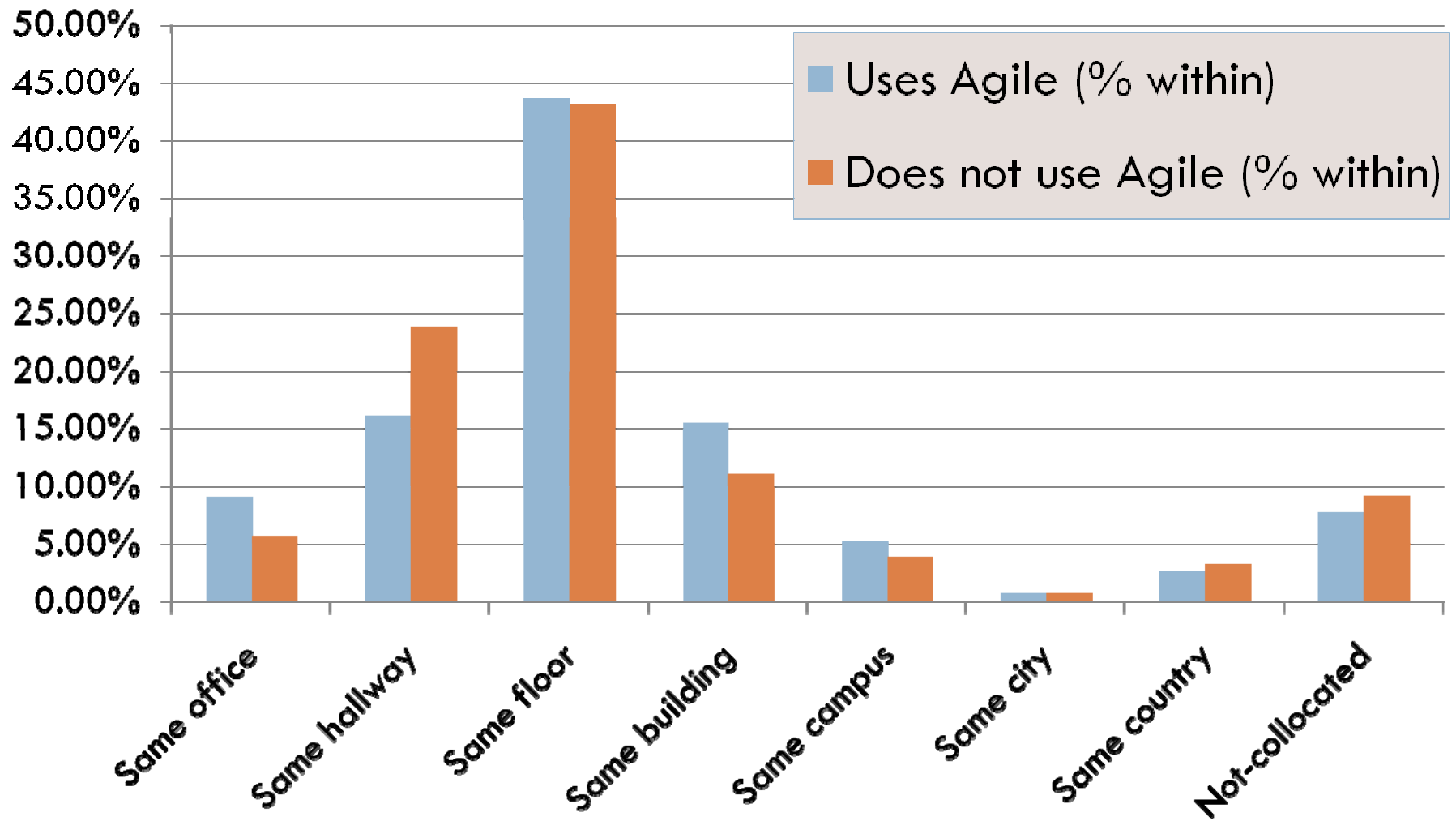
Agile Practice Penetration



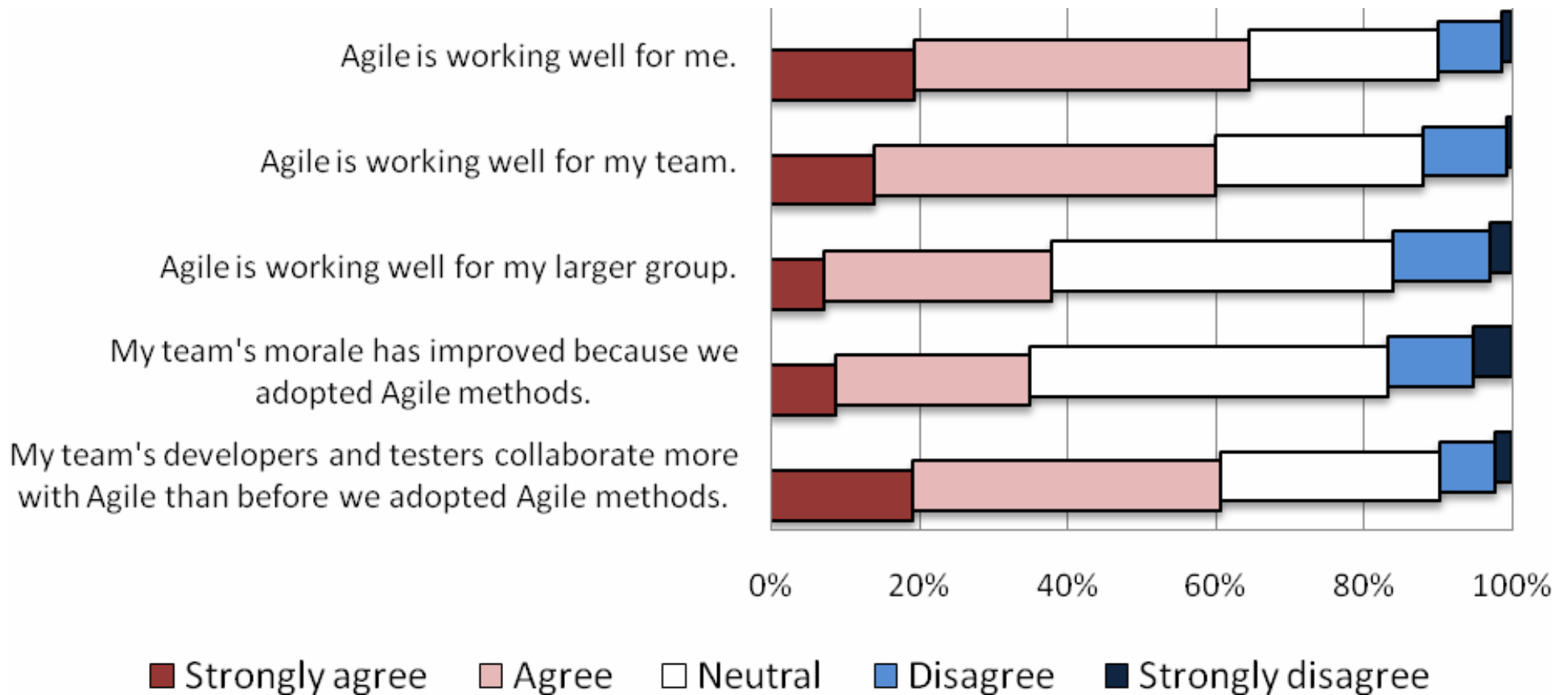
Length of Time Using Agile



Team Collocation



Engineering Teams Like Agile



Qualitative Methodology



- Open Coding via Card Sort
 - Print all long answer responses (for each survey question) on index cards
 - Sort them into piles on a table, by theme
 - Move cards between piles until settled
 - Each answer can be in only one pile
 - Piles labeled by theme of answers within
 - 2 researchers working together
 - 2-3 hours per card sort

Perceived Benefits from Agile

1. Improved Communication and Coordination	121
2. Quick Releases	101
3. Flexibility of Design – Quicker Response to Changes	86
4. More Reasonable Process	65
5. Increased Quality	62

687 comments, **44** themes

Perceived Problems from Agile

1. Does not scale to larger projects	52
2. Too many meetings	44
3. Management buy-in	37
4. Unfamiliar with Agile	36
5. Coordination with other teams	29
6. Losing sight of the big picture	29

565 comments, 58 themes

Open Questions



- How do you scale Agile to large (500-5000 person) teams?
- How do you best coordinate Agile and non-Agile teams?
 - ▣ Recently finished study on software team coordination at MS (in submission).
- What are the best software metrics for discerning Agile (vs. non-Agile) process effects on teams' artifacts?
- How can we fix actual and perceived problems uncovered in ethnographic investigations of Agile software development teams?

Conclusions



- 1 / 3 of respondents (spread across divisions) report their team uses Agile methodologies.
 - They mainly use Scrum.
 - Used for many legacy products.
 - Test-driven development and pair programming are *not* very common.
 - Agile usage does not appear to affect team collocation.
- MS engineers who have used Agile like it for their local team, but not necessarily for their organization.
 - They worry about scale, overhead, and management buy-in.

Questions?



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