Survey Says: Agile Works in Practice

Agile software development methods and techniques are gaining traction

Scott Ambler

The results of Scott's survey indicate that agile software development methods and techniques are gaining traction.

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IN A PRESENTATION at the Rational Software Developers Conference, Ivar Jacobson summed it up well with "These days, to say that you're not agile is the equivalent of saying that you're not potent." Be that as it may, it's clear that the agile software development movement has garnered more and more attention within the IT community over the past several years. But for many people, rhetoric isn't sufficient—they want to know how many people are actually doing this agile stuff, what are they doing, and are they actually benefiting from it? To answer these questions I ran a survey in March of 2006, which was sent out to the combined mailing lists from *Dr. Dobb's Journal* and *Software Development.* The survey was based on one performed in 2003 by Shine Technologies (http://www.shinetech.com). Although my results are similar, my survey reached a larger number of people (4232 versus 131 responses) and it's up to date.

Who Responded

At the beginning of the survey, I asked people to rate their skill set on a scale of 1 to 5, with 1 being novice and 5 being expert. Table 1 summarizes the results, and as you can see, on average the respondents appear to be highly skilled. I also asked about the size of their IT group, and as you can see in Table 2 there seems to be a fair representation of organizations. Figure 1 summarizes the extent of understanding, which people have regarding agile techniques, and clearly we have our work cut out for us—54 percent believe that they have limited or very limited knowledge and 33 percent believe they have an average understanding. Unfortunately, I did not ask about the industry/sector that the organization is in or the geographical location of the organization.
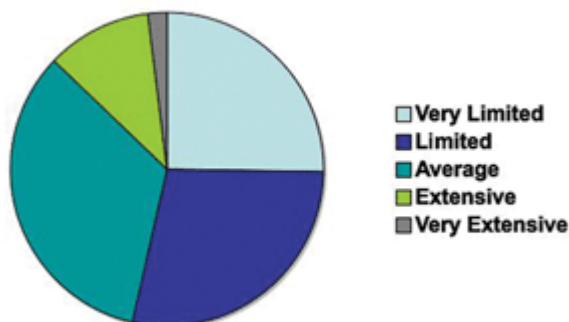
SKILL	SKILL LEVEL
Architecture	3.35
DBA	2.75
Ent Arch	2.8
IT Mgmt	2.81
Operations	2.7
Programming	3.95
Proj Mgmt	3.15
QA	2.93
Req. Analysis	3.37
Testing	3.18

Table 1: Average skill levels of respondents.

PEOPLE	# RESPONDENTS
1 to 10	1353
11 to 50	877
51 to 100	422
101 to 200	332
201 to 500	310
501 to 1000	232
1000 to 2000	142
2000+	564
Total	4,232

Table 2: Number of people within the IT organization.

What Agile Stuff Are We Actually Doing?

When asked whether their organization had adopted an agile method such as Extreme Programming (XP) or Scrum, 41 percent responded that their organization had adopted one or more such methods. Table 3 summarizes the results. Although it is no surprise that XP and Scrum are popular options, other methods such as the Agile MSF, AUP, and in particular FDD had strong showings.

METHOD	# RESPONDENTS
Agile MSF	191
Agile Unified Process (AUP)	216
Crystal Clear	91
Dynamic System Development Method (DSDM)	26
Extreme Programming (XP)	954
Feature Driven Development (FDD)	502

Scrum	460
Other	171

I also asked whether the organization has adopted any agile development techniques, such as Test Driven Development (TDD) or pair programming, and the results were very encouraging: 65 percent of respondents indicated that they had adopted one or more agile techniques. Table 4 summarizes the results. It's interesting to note the high acceptance rates of quality-oriented techniques such as common coding guidelines, refactoring, regression testing, and TDD. I'm excited to see that agile database development techniques, such as database refactoring and database regression testing, are beginning to catch on.

How Well Is Agile Working?

The agile approach to software development appears to work very well in practice. The survey asked people how agile approaches affected their overall productivity, the quality of the systems that they delivered, and the satisfaction levels of their business stakeholders; the results show that adoption of agile approaches has clearly been a resounding success.

The affect that agile approaches have on productivity is summarized in Figure 2. Only 6 percent indicated that their productivity was lowered, not bad considering you have to expect some project teams to fail, particularly on their first attempt. No change in productivity was reported by 34 percent of respondents and 60 percent reported increased productivity.
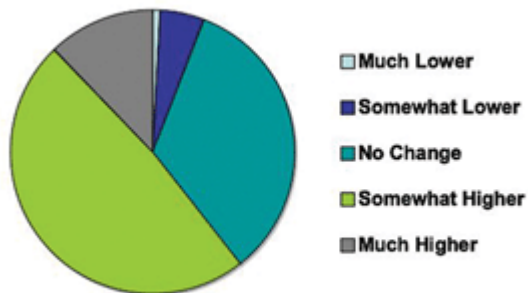

Much Lower
Somewhat Lower
No Change
Somewhat Higher
Much Higher

Figure 2: How have agile approaches affected your productivity?

Figure 3 summarizes the affect that agile approaches have had on the quality of delivered systems. The results are even better, with 66 percent responding that the quality is higher. Considering the high rate of adoption of quality-oriented techniques (see Table 4), this shouldn't come as a surprise. Apparently being "quality infected" has paid off for the agile community.
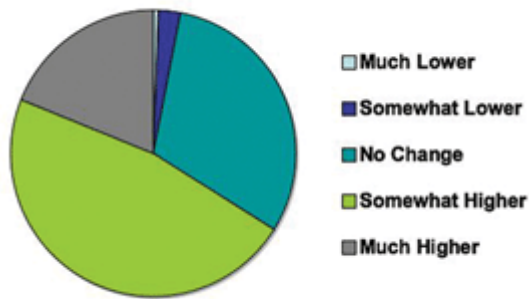
Figure 3: How have agile approaches affected the quality of systems deployed?

TECHNIQUE	# RESPONDENTS
Active stakeholder participation	938
Agile Model Driven Development (AMDD)	260
Code refactoring	1467
Code regression testing	1383
Colocation	447
Common coding guidelines	1595
Continuous integration	1113
Database refactoring	416
Database regression testing	407
Pair programming	587
Single sourcing information	241
Test Driven Development (TDD)	959

Table 4: Adoption of agile techniques (multiple answers allowed).

It also appears that agile software development's focus on collaborative techniques, such as active stakeholder participation and increased feedback, have helped to improve business stakeholder satisfaction. As you can see in Figure 4, 58 percent of organizations report improved satisfaction, whereas only 3 percent report reduced satisfaction. The source data for this survey can be downloaded from www.ambysoft.com/surveys if you wish to analyze it yourself.
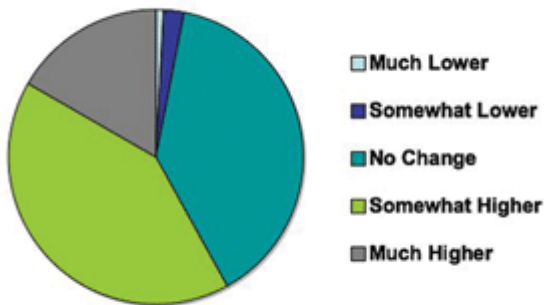
Figure 4: How have agile approaches affected business stakeholder satisfaction?

Conclusion

It should be fairly clear that agile software development methods and techniques are gaining acceptance within the IT industry. Adoption of agile techniques is further ahead than adoption of agile methods, but that should come as no surprise—most organizations choose to perform software process improvement on an incremental basis, so it makes sense that we would see some organizations just getting started. It's also interesting to note that XP isn't the only agile methodology in play, although it still remains the most popular.

Agile Adoption Rates

A March 2006 survey of 4232 IT professionals shows:

• 65 percent work in organizations that have adopted one or more agile development techniques

• 41 percent work in organizations that have adopted one or more agile methodologies

• 60 percent report increased productivity

• 66 percent report increased quality

• 58 percent report improved stakeholder satisfaction

The survey also revealed that some organizations still need to consider taking the "agile plunge." In my May 2006 column (www.ddj.com/dept/architect/ 187200223), I claimed that agile is just now in the process of crossing the adoption chasm, so it isn't surprising to see that some companies have yet to move in this direction. Considering what other organizations have achieved when it comes to increased productivity, quality, and stakeholder satisfaction, adopting a more agile approach seems like a pretty good risk to me.