Executive Summary

Agile Adoption & Use

Organizations are continuing to scale agile beyond single teams and single projects. This year we saw a 15% jump in the number of respondents who work where there are at least 5 agile teams, and a 9% increase in those working with up to 5 agile projects. In addition, in agile momentum is up; those who plan to implement agile development in future projects has increased from 59% last year to 83% this year.

Most are using Scrum or Scrum variants (72%), as in past years. Kanban and Kanban variants nearly doubled this year, mostly due to an uptick in Scrumban use. This year we wanted to know how people are using Kanban. For most, Kanban methodologies including Scrumban were being applied to processes inside the software organization only (61%).

Knowledge & Execution

Software professionals are becoming more experienced with agile. The number of respondents who have practiced agile for 5 or more years grew from 18% in 2011 to 25% in 2012. There was also tremendous growth in the 2-5 years of experience group, which increased from 37% to 64%.

When asked who knows agile the most and the least about agile within their organizations, not surprisingly respondents believed that those closest to the work were most agile-savvy – 57% said ScrumMasters and Project Managers are the most knowledgeable. The least agile-savvy groups were Product Owners (3%) and Executives (2%). The topic of Agile Portfolio Management (APM) was relatively new or unfamiliar for most. Only one-quarter were practicing, learning about, or planning to practice APM.

This year we dug a bit deeper into why agile initiatives fail and found that in two-thirds of the cases, it was either a failure to integrate the right people or to teach a team-based culture. Other reasons included a communication problem between the development team and other areas of the business, or a ScrumMaster problem, such as having responsibilities outside of the role. In terms of lessons learned when scaling agile beyond a single team, respondents said the most important success factor is to ensure the effort has sufficient executive sponsorship. Having a training program, internal support groups, and common tools were also cited as important lessons learned.

Benefits

Ninety percent of respondents said that implementing agile improved their ability to manage changing priorities. More people are also seeing value in terms of project visibility when implementing agile (64% compared to 77% in 2011). In addition, the general perception of agile is up. When asked, “If you could say one thing to your company president about agile, what would you say?” respondents were very positive. Common responses were around cultural change, hiring a knowledgeable ScrumMaster, investing in training, adoption from the top-down, and giving agile enough time to succeed.

Agile Tools

When looking at the general types of tools currently in use, the biggest jump over the last year was Taskboards (+11%), followed by Kanban boards (+10%), Agile Project Management Tools (+8%), and Release Management (+8%).

On average, respondents used between 3 and 4 different tools, with a handful having used as many as 15. Specific tools most commonly used continue to be standard office productivity tools such as Excel, followed by specialized tools like Microsoft Project, VersionOne and Atlassian/JIRA.

The survey also asked respondents whether they would recommend the tool(s) they are using based on their past or present use. Of the tools evaluated, VersionOne was the number one recommended out of any other tool (93% of users would recommend it), followed by LeanKit (92%), and Atlassian/JIRA (92%). Interestingly, while Excel was the most commonly used tool (69%), nearly 40% of these users said they would NOT recommend Excel as an effective agile management tool.

When those using a tool were asked how they decided it was time for a tool, the most commonly cited reasons were (1) more collaboration, (2) visualization of workflow, (3) co-located/offshore teams unable to see physical boards, and (4) roll-up metrics across projects/groups.
About The Survey

The seventh annual “State of Agile Development” survey was conducted between August 9th and November 1, 2012. Sponsored by VersionOne, the survey polled 4,048 individuals from various channels in the software development communities. The data was analyzed and prepared into a summary report by Analysis.Net Research, an independent survey consultancy.
Agile Dev Survey
Respondent Demographics

**SIZE OF ORGANIZATION**

100

The median size of respondents' software organizations was 100, with a quarter of respondents coming from organizations of more than 500.

**AGILE PRACTITIONERS**

61%

About three-fifths (61 percent) were agile practitioners, with the rest being agile coaches/consultants/trainers (19 percent) and "Other" (20 percent). Other departments represented were often Product Management, Operations, Management/Business and Marketing. Industries represented included IT Services, Financial, Insurance, Consulting, Education and Government.

**CURRENT COMPANY POSITION**

More than 80 percent worked in Software Development or the IT departments of their employers. Respondents were most commonly project managers, scrum masters and team leads, followed by software development team members.
WHY THEY BUILD
When asked what the main activity of their software organization, most respondents said they build and sell software products.

44% Build & sell a product
33% Build for internal use
23% Sell IT services

PERSONAL EXPERIENCE WITH AGILE DEVELOPMENT PRACTICES

81% of respondents say they are at least "knowledgeable" about agile software development techniques with more than a quarter saying they were "extremely knowledgeable."

26% 1-2 years
30% 3-4 years
25% 5+ years
19% <1 year

Extremely knowledgeable
Moderately knowledgeable
Knowledgeable
Very Little/No Knowledge
COMPANY EXPERIENCE

How Many?
More than 84% of respondents said their organizations were practicing agile development, up from 80% in 2014.

84% Yes 16% No

How Long?
One-half of respondents worked at companies that have been practicing agile for 2 years or less, with over one-third having practiced in the 2 to 5 year range.

12% < 1 Year 38% 1-2 Years 36% 2-5 Years 14% 5+ Years

PERCENTAGE OF PROJECTS USING AGILE

0-25% of Projects
13% 26-50% of Projects
19% 51-75% of Projects
31%

76-100% of Projects
37%

WHO KNOWS AGILE?
Not surprisingly, respondents said that in general, roles which are closer to the team are more knowledgeable than those on the business side.

43% ScrumMaster
14% Dev Manager/Director/VP
14% Project Manager
11% Developer
6% Product Manager
2% QA
2% Executive
2% Business Analyst
1% Product Owner
5% Other

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WHO CHAMPIONS?

Initial champions of agile methods were mostly in the management layer (63%).

- 63% Management
- 17% Dev/IT Staff
- 13% Executives
- 7% Consultants/Trainers/Other

HOW MANY TEAMS ADOPTED AGILE?

This year we’ve seen growth in the number of teams practicing agile at each organization surveyed. Nearly half of respondents worked at companies that had adopted agile practices across 5 or more teams (48%), up from 33% in 2014 and 30% said they had 10 or more agile teams.

- 30% 10+ teams
- 13% 0-5 projects
- 18% 6-10 projects
- 38% 2-5 teams

NUMBER OF COMPANY PROJECTS USING AGILE

The majority of respondents had up to 5 agile projects (59%), compared to 50% in 2014. About one-third said their organizations have 10 or more agile projects.

- 30% 10+ projects
- 11% 0-5 projects
- 15% 6-10 projects
- 17% 1-10 projects
- 33% 0-1 projects

NUMBER OF DISTRIBUTED TEAMS USING AGILE

Only 35% of respondents worked in a company that had distributed software teams. However, those who answered yes had, on average, 7 distributed teams.

- 17% 4-5
- 19% 2-3
- 11% 1-2
- 17% 0-1
- 15% 6-10

Median Organization Size: 100 people; 25% came from organizations of >500 people.
AGILE METHODOLOGY USED

Serum or Scrum variants (72%) are still the most popular agile methodologies being used. Kanban and Kankan variants nearly doubled this year, mostly due to an uptick in Scrum use.

AGILE TECHNIQUES EMPLOYED

Again this year, core agile tenets currently in use are: Daily Standup, Iteration Planning and Unit Testing. The two techniques that grew the most in usage from this year to last year were Kanban and Retrospectives; yet, agile techniques increased in every area but one (Continuous Deployment).

*a* Respondents were able to select multiple options.

- Daily Standup
- Iteration Planning
- Unit Testing
- Retrospectives
- Release Planning
- Burndown/Team-Based Estimation
- Velocity
- Coding Standards
- Continuous Integration
- Automated Builds
- Dedicated Product Owner
- Integrated Dev/QA
- Refactoring
- Open Workarea
- TDD
- Digital Taskboard
- Story Mapping
- Kanban
- Collective Code Ownership
- Pair Programming
- Automated Acceptance Testing
- Analog Taskboard
- Continuous Deployment
- Agile Games
- Cycle Time
- BDD
LEADING CAUSES OF FAILED AGILE PROJECTS

Most respondents said none of their agile projects would be considered unsuccessful (18%). Of those with failed agile projects, most said it was due to either a company philosophy or culture at odds with core agile values (12%), external pressure to follow waterfall processes (11%), or a broader organizational or communications problem (11%).

- None of our agile projects failed: 18%
- Company philosophy or culture at odds with core agile values: 12%
- External pressure to follow traditional waterfall processes: 11%
- A broader organizational or communications problem: 11%
- Lack of experience with agile methods: 9%
- Lack of cultural transition: 8%
- Other: 6%
- Unwillingness of team to follow agile: 6%
- Lack of management support: 6%
- Don't know: 6%
- Insufficient training: 4%
- New to agile: 3%

KANBAN USES

Those using Kanban or Scrum were primarily using these methods for business processes inside the software organization only.

- Inside: 61%
- Inside & Outside: 25%
- Outside: 9%
- Other: 5%

AGILE PORTFOLIO MANAGEMENT (APM)

For many of the respondents, APM is relatively new or unfamiliar. Only one-quarter are practicing, learning about, or planning to practice APM.

- Practicing: 11%
- Not practicing: 34%
- Plan to practice: 14%
- Learning: 7%
- Don't know what it is: 34%
SPECIFIC ORGANIZATIONAL ISSUES CITED
When asked what were the organizational problems behind any agile project failures, respondents most frequently cited a failure to integrate the right people, or to teach a team-based culture.

ROLE OF THE SCRUMMASTER
Respondents said they worked at companies where the ScrumMaster is focused mainly on facilitating projects and less on other duties.

BARRIERS TO FURTHER AGILE ADOPTION
The inability to change their organization’s culture was the number-one barrier to further adoption, followed by a general resistance to change and trying to fit agile elements into a non-agile framework. Perceived time to transition and budget constraints had the lowest impact on further adoption.

*Respondents were allowed to select more than one.
GREATEST CONCERNS ABOUT ADOPTING AGILE

The most common concerns listed by respondents when they were considering deploying agile were a lack of upfront planning (34%), loss of management control (31%), or management opposition (27%).

*Respondents were able to select multiple options.

- Lack of up-front planning: 34%
- Loss of management control: 31%
- Management opposition: 27%
- Lack of documentation: 26%
- Lack of predictability: 24%
- Lack of engineering discipline: 20%
- Dev team opposed to change: 18%
- No concerns: 18%
- Inability to scale: 17%
- Regulatory compliance: 14%
- Quality of engineering talent: 13%
- Reduced software quality: 9%

FUTURE AGILE IMPLEMENTATION

Only 3% said they do not plan to implement agile methods on future projects.

- Yes: 83%
- Don't Know: 14%
- No: 3%

WHAT WOULD THEY SAY?

When asked, "If you could say one thing to your company president about agile, what would you say?" respondents were very positive. Common responses were around cultural change, hiring a knowledgeable ScrumMaster, investing in training, and adoption from the top-down.

Agile comes with a cultural change, or don't do it at all.

Managers should be willing to listen and learn about agile. They should not look at it as an uncontrolled process.

Give it time to prove itself. After C1 year of management being OK with teams using agile, it's too early to call success or failure. Teams are gradually catching on to the new mindsets and practices.

Provide more funding for agile training.

Every one of our teams should be doing this. Agile doesn't need risk mitigation; it is risk mitigation.

Agile transformation needs investment in skills and a real cultural change with regard to requirements documentation. Neither of these is going to happen without your proactive support.
### WHY AGILE?

Once again, top 3 reasons* respondents cited for adopting agile were to accelerate time to market, more easily manage changing priorities, and to better align IT and business objectives:

*Respondents were able to select multiple options.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Not important at all</th>
<th>Somewhat important</th>
<th>Very Important</th>
<th>Highest importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerate time to market</td>
<td>5.1%</td>
<td>22.5%</td>
<td>43.4%</td>
<td>30.0%</td>
</tr>
<tr>
<td>Manage changing priorities</td>
<td>3.1%</td>
<td>19.2%</td>
<td>48.7%</td>
<td>29.0%</td>
</tr>
<tr>
<td>Better Align IT/Business</td>
<td>11.1%</td>
<td>25.0%</td>
<td>41.2%</td>
<td>21.7%</td>
</tr>
<tr>
<td>Increase productivity</td>
<td>4.1%</td>
<td>24.0%</td>
<td>54.4%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Enhance software quality</td>
<td>7.1%</td>
<td>26.0%</td>
<td>50.4%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Project visibility</td>
<td>10.0%</td>
<td>30.0%</td>
<td>45.0%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Reduce risk</td>
<td>8.0%</td>
<td>35.0%</td>
<td>49.0%</td>
<td>12.0%</td>
</tr>
<tr>
<td>Simplify development process</td>
<td>11.0%</td>
<td>37.0%</td>
<td>41.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Reduce cost</td>
<td>17.0%</td>
<td>39.0%</td>
<td>39.0%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Enhance software maintainability/extendibility</td>
<td>14.0%</td>
<td>39.0%</td>
<td>39.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Improve team morale</td>
<td>15.0%</td>
<td>40.0%</td>
<td>38.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Improve/increase engineering discipline</td>
<td>16.0%</td>
<td>42.0%</td>
<td>35.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Manage distributed teams</td>
<td>38.0%</td>
<td>33.0%</td>
<td>24.0%</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

### OVERALL CONSENSUS REGARDING ADOPTION OF AGILE

The vast majority of respondents felt that agile projects have a faster time to completion.

- Faster time to complete: 70%
- Same time to complete: 11%
- Not yet completed an Agile project: 14%
- Slower time to complete: 5%
### EXPERIENCED AGILE USERS SAID THE TOP 3 BENEFITS

of agile were the ability to manage changing priorities, productivity, and project visibility. Overall, the "project visibility" category saw the greatest increase in benefit, from 77% in 2011 to 84% in 2012.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Got Better</th>
<th>No Benefit</th>
<th>Got Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to manage changing priorities</td>
<td>90%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Increased productivity</td>
<td>85%</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>Improved project visibility</td>
<td>84%</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>Improved team morale</td>
<td>84%</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Enhanced software quality</td>
<td>81%</td>
<td>17%</td>
<td>2%</td>
</tr>
<tr>
<td>Reduce risk</td>
<td>80%</td>
<td>18%</td>
<td>2%</td>
</tr>
<tr>
<td>Faster time-to-market</td>
<td>79%</td>
<td>19%</td>
<td>2%</td>
</tr>
<tr>
<td>Better alignment between IT &amp; Business Objectives</td>
<td>79%</td>
<td>20%</td>
<td>1%</td>
</tr>
<tr>
<td>Simplify development process</td>
<td>76%</td>
<td>20%</td>
<td>4%</td>
</tr>
<tr>
<td>Improved/increased engineering discipline</td>
<td>74%</td>
<td>23%</td>
<td>3%</td>
</tr>
<tr>
<td>Enhanced software maintainability/extensibility</td>
<td>74%</td>
<td>23%</td>
<td>3%</td>
</tr>
<tr>
<td>Manage distributed teams</td>
<td>67%</td>
<td>30%</td>
<td>3%</td>
</tr>
</tbody>
</table>

### OUTSOURCED DEVELOPMENT PROJECTS

Fewer people are using, or plan to use, agile methods on projects that are being outsourced (49% versus 77% last year). Thirty-five percent said they do now and will continue to do so, while 28% of those not doing it say they plan to in the future.

- 90% of respondents said implementing agile improved their ability to manage changing priorities.
- 84% said agile improved their project visibility.
- 3/4 of respondents said their agile projects were successful.
- 1/4 had success with 100% of their projects.
BEST ‘LESSONS LEARNED’

Respondents said the most important thing to know when trying to scale agile beyond a single team is ensuring the effort has sufficient executive sponsorship. Having a training program, internal support groups, and common tools were also seen as being important.

- **23%** Executive sponsorship
- **18%** Training program/workshops
- **13%** Implementation of a common tool
- **12%** Internal agile support group
- **10%** Full-time agile coach
- **8%** Contracted consultant
- **6%** Not yet scaled
- **6%** Reference books
- **4%** eLearning
AGILE TOOL USES & PREFERENCES

Respondents currently use a wide variety of agile tools; the most commonly ones being used (or planned to use) were Bug Trackers, Automated Build Tools and Wikis. The most desired tool were Ideas Management, followed by Automated Acceptance Test, and Refactoring Tools. Respondents indicated the least need for PPM tools, followed by Traditional PM tools and Index cards.

The biggest jump in tools currently used from 2011 to 2012 was Taskboards (9%), followed by Kanban boards (10%), Agile Project Management Tools (9%), and Release Management (8%).

<table>
<thead>
<tr>
<th>Tool</th>
<th>Currently Use</th>
<th>Plan to Use</th>
<th>Would Like to Use</th>
<th>Do Not Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bug trackers</td>
<td>83%</td>
<td>5%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Automated build tool</td>
<td>68%</td>
<td>12%</td>
<td>13%</td>
<td>7%</td>
</tr>
<tr>
<td>Wikis</td>
<td>72%</td>
<td>7%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Unit test tool</td>
<td>66%</td>
<td>12%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Spreadsheets</td>
<td>69%</td>
<td>2%</td>
<td>3%</td>
<td>26%</td>
</tr>
<tr>
<td>Taskboards</td>
<td>69%</td>
<td>2%</td>
<td>3%</td>
<td>26%</td>
</tr>
<tr>
<td>Agile project management tool</td>
<td>60%</td>
<td>11%</td>
<td>18%</td>
<td>10%</td>
</tr>
<tr>
<td>Continuous integration tool</td>
<td>56%</td>
<td>14%</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Release management tool</td>
<td>47%</td>
<td>12%</td>
<td>26%</td>
<td>15%</td>
</tr>
<tr>
<td>Requirements management tool</td>
<td>47%</td>
<td>11%</td>
<td>23%</td>
<td>19%</td>
</tr>
<tr>
<td>Story mapping</td>
<td>42%</td>
<td>14%</td>
<td>26%</td>
<td>18%</td>
</tr>
<tr>
<td>Traditional project management tool</td>
<td>49%</td>
<td>4%</td>
<td>5%</td>
<td>42%</td>
</tr>
<tr>
<td>Index cards</td>
<td>46%</td>
<td>6%</td>
<td>9%</td>
<td>39%</td>
</tr>
<tr>
<td>Automated acceptance test tool</td>
<td>33%</td>
<td>19%</td>
<td>35%</td>
<td>13%</td>
</tr>
<tr>
<td>Kanban board</td>
<td>37%</td>
<td>9%</td>
<td>15%</td>
<td>39%</td>
</tr>
<tr>
<td>Refactoring tool</td>
<td>32%</td>
<td>11%</td>
<td>15%</td>
<td>24%</td>
</tr>
<tr>
<td>Ideas management tool</td>
<td>20%</td>
<td>11%</td>
<td>35%</td>
<td>34%</td>
</tr>
<tr>
<td>PPM tool</td>
<td>20%</td>
<td>10%</td>
<td>22%</td>
<td>48%</td>
</tr>
</tbody>
</table>
SPECIFIC AGILE TOOLS USED

On average, respondents used* between 3-4 different tools. A handful said they used as many as 15. The most commonly used tools used continue to be standard office productivity tools such as Excel, followed by specialized tools like Microsoft Project, VersionOne and Atlassian/JIRA.

*Respondents were able to select multiple options.

* Note: Previously vendors "X" and "Y" requested not to be identified in the State of Agile Dev Survey.
SATISFACTION WITH TOOL CHOICE

In addition to tool use, respondents were asked whether they would recommend the tool(s) they are using based on their past or present use. Of the tools evaluated in the survey, VersionOne had the highest satisfaction rate of any other tool evaluated (93% of respondents using VersionOne would recommend it), followed by LeanKit (92%), Atlassian/JIRA/Greenhopper (92%) and Vendor Y (87%). The least recommended tools were Microsoft Project (50%), In-House/Homegrown (51%) and XPlanner (51%).

TIMING FOR TOOL ADOPTION

When respondents using a tool were asked how they decided it was time for a tool, the most commonly cited reasons were:

- More collaboration & visualization of workflow
- Co-located/offshore teams unable to see physical boards
- Consistency & roll-up metrics across projects/groups

Percent of Users Who Would Recommend

Note: Previously vendors “X” and “Y” requested not to be identified in the State of Agile Dev Survey.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>VersionOne</td>
<td>93%</td>
</tr>
<tr>
<td>Atlassian/JIRA/Greenhopper</td>
<td>92%</td>
</tr>
<tr>
<td>LeanKit</td>
<td>92%</td>
</tr>
<tr>
<td>Vendor Y</td>
<td>87%</td>
</tr>
<tr>
<td>Microsoft TFS</td>
<td>81%</td>
</tr>
<tr>
<td>Google Docs</td>
<td>77%</td>
</tr>
<tr>
<td>Pivotal Tracker</td>
<td>74%</td>
</tr>
<tr>
<td>Target Process</td>
<td>72%</td>
</tr>
<tr>
<td>Bugzilla</td>
<td>72%</td>
</tr>
<tr>
<td>Vendor X</td>
<td>72%</td>
</tr>
<tr>
<td>IBM Rational Team Concert</td>
<td>67%</td>
</tr>
<tr>
<td>CA Agile Vision</td>
<td>65%</td>
</tr>
<tr>
<td>HP Quality Center</td>
<td>65%</td>
</tr>
<tr>
<td>ThoughtWorks Mingle</td>
<td>64%</td>
</tr>
<tr>
<td>Excel</td>
<td>63%</td>
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<tr>
<td>Rational</td>
<td>57%</td>
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<tr>
<td>IBM ClearCase</td>
<td>51%</td>
</tr>
<tr>
<td>XPlanner</td>
<td>51%</td>
</tr>
<tr>
<td>In-House/Homegrown</td>
<td>51%</td>
</tr>
<tr>
<td>Microsoft Project</td>
<td>50%</td>
</tr>
<tr>
<td>Other</td>
<td>47%</td>
</tr>
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</table>