The Scrum Workflow:
Describing How the Pieces Fit Together

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EXERCISE

Instructions: read the text below identifying the components of the Scrum framework. Next, draw a picture of Scrum as if you were explaining it to someone for the first time. You may use all, some or even none(!) of the pieces below.

**Scrum Jigsaw**

**Roles**
1. Development Team: people who are responsible for getting the work done.
2. Product Owner: person who is accountable for the business outcomes.
3. ScrumMaster: guardian of the Scrum process and responsible for improving the flow of value to the customer.

**Artifacts**
1. Product Backlog: a prioritized list of the functional and non-functional requirements necessary to develop and launch a successful product.
2. Definition of Done: a checklist of activities each backlog item must complete so it may be considered potentially shippable for a new, or existing, customer.
3. Sprint Backlog: a list of all the tasks and intermediate work items that will turn the Product Backlog items into a potentially shippable product.
4. Burndown Chart: a graph of work remaining versus time.

**Events**
1. The Sprint: a timeboxed iteration from one week to no more than thirty days.
2. Sprint Planning: a timeboxed conversation at the beginning of each Sprint to decide what will be delivered and demonstrated at the Sprint Review.
3. Sprint Review: a timeboxed conversation at the end of each Sprint to provide feedback on the product.
4. Retrospective: a timeboxed conversation at the end of each Sprint for the Scrum Team to reflect and look for improvements.
5. Daily Scrum: a daily, timeboxed gathering not to exceed 15 minutes.
After you have finished with your drawing, take a picture of your diagram and upload it to the website for your instructor to review.

Now take a moment to watch two shorts video on the website about how the pieces of Scrum interact together. Use the space below to take any notes you might want to capture or to write any questions you might have for your instructor. After watching the videos, review your diagram and make any updates, additions or corrections that you feel are necessary.
**APPLY YOUR LEARNING**

Instructions: complete this quiz based on the information in the videos and select the answer that is MOST correct.

1. What is the Scrum Team’s goal in the first Sprint?
   - (a) Begin the requirements analysis, architecture and infrastructure.
   - (b) Create the initial Product Backlog.
   - (c) Build a potentially shippable product increment.
   - (d) Draft the initial project charter to launch the Scrum Team.

2. Not counting the ScrumMaster or Product Owner, how many people are on a Scrum Team?
   - (a) No more than ten people plus or minus two.
   - (b) Five to seven people plus or minus two.
   - (c) Four to thirteen people plus or minus three.
   - (d) More than three, but less than, or equal to, twenty.

3. How is the Product Backlog ordered?
   - (a) According to business value.
   - (b) As specified by the ScrumMaster.
   - (c) As stated in the contract.
   - (d) Based on return-on-investment.

4. According to Ken Schwaber, one of the co-creators of Scrum, when an organization modifies Scrum what are they doing?
   - (a) Being pragmatic.
   - (b) Masking one, or more, dysfunctions.
   - (c) Ensuring they deliver value to their customers.
   - (d) Applying their experience and judgment.

5. Who is responsible for testing the product?
   - (a) ScrumMaster.
   - (b) QA manager.
   - (c) Product Owner.
   - (d) Development Team.
6. What is the core objective of Scrum?
   (a) Manage the Team members in the most efficient way possible.
   (b) Deliver valuable, high-quality functionality by the end of every Sprint.
   (c) Ensure the business delivers the project on-time and on-budget.
   (d) Use new management practices to get twice the work done in half the time.

7. What is NOT a goal of the Retrospective?
   (a) Reflect on the results of the recently completed Sprint.
   (b) Examine the technical practices of the Team members.
   (c) Take a break after the Sprint to unwind and relax.
   (d) Identify specific action items to implement in the next Sprint.

8. What is NOT a reason why Stakeholders would attend a Sprint Review?
   (a) Review the Scrum Team’s progress through working software.
   (b) Ensure on-time delivery of the project and reduce any risks.
   (c) Inspect-and-adapt both the product and the business goals.
   (d) Provide the Scrum Team feedback on the product.

9. What is the maximum length of a Sprint?
   (a) Less than seven days.
   (b) No more than fourteen days.
   (c) Up to twenty-eight days.
   (d) Less than, or equal to, thirty days.

10. When does the Product Owner update the Product Backlog?
    (a) After the Sprint Review, but before Sprint Planning.
    (b) Before meeting with the Team in the Daily Scrum.
    (c) Any time during the Sprint when he or she learns something new.
    (d) During the Sprint Planning meeting.

11. What are the three roles in Scrum?
    (a) Developer, tester and analyst.
    (b) Scrum Team, business sponsor and project manager.
    (c) Development Team, Product Owner and ScrumMaster.
    (d) Team, Coach and Customer.
12. The three questions commonly discussed during the Daily Scrum support which Scrum values?
   (a) Visualize, limit work-in-progress and manage flow.
   (b) Communication, courage and simplicity.
   (c) Professional, engagement and volunteerism.
   (d) Focus, commitment and openness.

13. What are the two parts of Sprint Planning?
   (a) The planning and the commitment.
   (b) The what and the how.
   (c) The task estimation and the task assignments.
   (d) The analysis and the design.

14. How many working days should be allocated between Sprints for bug fixing, system testing, refactoring, test automation and/or documentation?
   (a) Zero.
   (b) Two to three.
   (c) Up to five.
   (d) No more than ten.

15. When do Scrum Teams accept new requirements?
   (a) When planning any Sprint before the elaboration phase begins.
   (b) When planning any Sprint early, or late, in development.
   (c) When planning any Sprint early in development.
   (d) When planning any Sprint before the construction phase begins.

16. By the end of a three-month release cycle, what expectations should the business and customers have regarding the Scrum Team’s efforts?
   (a) All the original scope has been delivered ahead of schedule.
   (b) Only the most valuable requirements have been delivered, which may exclude some of the original scope.
   (c) Each item in the original scope has been delivered plus any additional requirements that were discovered along the way.
   (d) The original scope has been delivered on-time and on-budget.
17. What is a Sprint Backlog?
(a) A list of the technical tasks created just-in-time by the Development Team members.
(b) A prioritized list of features, outcomes and deliverables owned by the Product Owner.
(c) A list of anything that impedes the flow of value or delays the delivery of working software documented by the ScrumMaster.
(d) A condensed list of action items developed by the Scrum Team.

18. Who assigns the engineering tasks during Sprint Planning?
(a) Development Team members.
(b) ScrumMaster.
(c) Project manager.
(d) Product Owner.

19. Who has the final say on the Product Backlog ordering and contents?
(a) Development Team members.
(b) Stakeholders.
(c) ScrumMaster.
(d) Product Owner.

20. When is a Sprint complete?
(a) When the Sprint Goal has been delivered.
(b) When the timebox expires.
(c) When all the Product Backlog items meet their acceptance criteria.
(d) When all the Sprint Backlog items are finished and updated.
CONCLUSIONS

Instructions: read this 2006 article written by Ken Schwaber, one of the co-creators of Scrum. While reading, circle, highlight or underline the sentences or phrases, that evoke a reaction within you. Then complete the brief activity that follows the article.

Scrum is Hard & Disruptive

1) Scrum is a framework for iterative, incremental development using cross-functional, self-managing teams. It is built on industry best practices, Lean Thinking and empirical process control.

2) Scrum is optimized for high yield product management and product development. Scrum is particularly appropriate for high risk, complex, large projects and can be used when other parts of the endeavor are hardware or even waterfall development.

3) If waterfall suits current needs, continue using it.

4) An enterprise can use Scrum as a tool to become the best product development and management organization in its market. Scrum will highlight every deficiency and impediment that the enterprise has so the enterprise can fix them and change into such an organization.

5) Whenever an enterprise modifies or only partially implements Scrum, it is hiding or obscuring one or more dysfunctionalities that restrict its competence in product development and management.

6) The iterative, incremental nature of Scrum puts stress on the product development organization to improve its engineering skills and on the product management organization to optimize the return on investment of every release and project. The phrase, “That can’t be done here”, really means that it will be very difficult to do so. The gap between current practices and target practices is a measure of incompetence and competitive risk.

7) The use of Scrum to become an optimized product development and management organization is a change process that must be led from the top and requires change by everyone within the enterprise. Change is extremely difficult and fraught with conflict and may take many years of sustained effort. Turnover of staff and management can be expected.

8) The most serious impediments to using Scrum are habits of waterfall, predictive thinking over the last twenty to thirty years; these have spawned command and control management, belief that demanding something will make it happen and
the willingness of development to cut quality to meet dates. These are inbred habits that we aren’t even aware of anymore.

9) The focus of using Scrum is the change from old habits to new ways of doing business. Scrum is not implemented or rolled-out as a process; it is used to foment change.

10) Scrum is not a methodology that needs enhancing. That is how we got into trouble in the first place, thinking that the problem was not having a perfect methodology. Effort centers on the changes in the enterprise that is needed.

11) Iterative, incremental development is much harder than waterfall development; everything that was hard in waterfall engineering practices now has to be done every iteration and this is incredibly hard. It is not impossible, but has to be worked toward over time.

12) Managing a release or project to deliver only the highest value functionality and not deliver the rest optimizes value [and] is the job of product management and customers.

13) Self-managing teams are extremely productive. When they work closely with the customer to derive the best solution to a need, they and the customer are even more productive.

14) A team consists of people under pressure to do their best. Conflict is natural and the team needs to know how to deal with the conflict and have resources to draw on when needed.

15) The role of an enterprise’s management changes from telling people what to do to leading and helping everyone do their best to achieve goals. People aren’t resources and managers aren’t bosses.
Instructions: take a few moments to reflect on the article from Ken Schwaber and then answer the following questions with three or five paragraphs. For each question, write a minimum of one or two paragraphs and be sure to explain why you feel this way.

1. What does Ken’s perspective on Scrum mean for you personally?
2. How will the ideas in Ken’s article affect the way you work with your Team?
3. If you were to share Ken’s article with someone important in your organization, how do you imagine they would react?

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ADDITIONAL RESOURCES

BOOKS
• The Scrum Field Guide: Agile Advice for Your First Year & Beyond (2nd Edition) - by Mitch Lacey
• Scrum: The Art of Doing Twice the Work in Half the Time - by Jeff Sutherland and JJ Sutherland
• Agile Project Management with Scrum - by Ken Schwaber
• Agile Retrospectives: Making Good Teams Great - by Diana Larsen and Ester Derby
• Switch: How to Change Things When Change is Hard - by Chip and Dan Heath

BLOGS
• The Scrum Guide (the official source of Scrum in multiple languages)  
  http://www.scrumguides.org/index.html
• Mountain Goat Software (many practical articles by Mike Cohn)  
  https://www.mountaingoatsoftware.com/blog
• Scrum, Inc. (blog of Jeff Sutherland, co-creator of Scrum)  
  https://www.scruminc.com/scrum-blog/
• Notes from A Tool User (practical articles about Scrum & Agile by Mark Levison, CST)  
  https://agilepainrelief.com/notesfromatooluser
• Roman Voting  

VIDEOS
• The Scrum Process  
  https://www.youtube.com/watch?v=mB1E_HMzuEI
• The Scrum Framework  
  https://www.youtube.com/watch?v=_BWbaZs1M_8
• The Myths of Scrum (a video series by Mishkin Berteig)  
  http://bit.ly/2rz5iZT
• Understanding Agile and Scrum (Ken Schwaber)  
  https://www.youtube.com/watch?v=V5gnYy1sZL8
• The Art of Doing Twice as Much in Half the Time (Jeff Sutherland)  
  https://www.youtube.com/watch?v=s4thQcgLCqk
TECHNIQUE

$100 Test

<table>
<thead>
<tr>
<th>TIME NEEDED</th>
<th>PARTICIPANTS</th>
<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Hourglass]</td>
<td>![People]</td>
<td>![List]</td>
</tr>
<tr>
<td>15 - 35 minutes</td>
<td>3 - 7 people</td>
<td>Prioritization of ideas</td>
</tr>
</tbody>
</table>

WHAT YOU CAN LEARN

Participants assign relative values to a list of items by spending an imaginary $100 to prioritize the list of items, ideas, features or initiatives.

WHAT YOU NEED

1) Post-it notes
2) Markers or pens
3) Flip chart paper or whiteboard

HOW TO DO THIS

Begin with a list of items that need to be prioritized. We recommend making a list from four to twelve items (if you have more than twelve, or less than four, you will need a different prioritization technique). Then, create a three column chart - item, dollar amount spent and why - on the chart paper (or whiteboard) before the participants arrive. See the last page of this workbook for an example of the chart.

Next, explain the challenge to the participants: they have a collective $100 to spend on the list of items. The dollar amount represent the importance of an item and they must decide, as a group, how to allocate the $100 across the list. Offer the group from ten to twenty minutes to discuss the items, assign their dollar values, either as whole dollar amounts (i.e. $31, $90, etc.) or decimals (i.e. $12.39, $61.02, etc.), and to write on post-it notes brief explanations for their investment.

At the end of the timebox, ask for a volunteer to write the amount invested for each item in the second column of the chart and to post their post-it notes in the third
column. Please note, it is possible that the group will choose to invest $0 on some items. If they invest $0, it is important the participants explain why.

When all the columns in the chart have been filled in, offer the group from four to ten minutes to explain their decisions and reasoning. Work with the group to understand the trade-offs they made while investing their money.

This technique is a very powerful prioritization technique because it leverages a concept familiar to everyone - money. By using the concepts of cash and scarcity, the exercise tends to capture and keep the participants’ attention for longer than when using an arbitrary point system.

Feel free to use whatever is the preferred currency of the group as long as the amount being prioritized is equivalent to $100 USD, more or less. For people playing this game in the UK, this game would be called the “£100 Test”. While for players in India, it would be more accurate to call this game the “₹10000 Test”.

**WHO SHARED THIS WITH US**

James Macanufo and Sunni Brown
**CHALLENGE**

For this Challenge, we are asking to complete two tasks. First, read the article below, “How to Make a Switch”, by Chip and Dan Heath. Second, play the $100 Test described in the Technique section of your workbook to prioritize how you will make your switch to Scrum.

**Instructions:** read the following paragraphs on change. As you read, write an “I can use this” next to paragraphs that resonate with you.

### How to Make a Switch

*For things to change, somebody somewhere has to start acting differently.*

The greatest challenge to making change stick is the inherent tension between our emotions and intellect. This tension is best captured by the analogy used by University of Virginia psychologist Jonathan Haidt in his book, *The Happiness Hypothesis*.

In his book, Haidt says our emotional side is like an Elephant and our rational side is its Rider. Perched atop the Elephant, the Rider holds the reins and seems to be the leader. However, the Rider’s control is precarious because the Rider is so small relative to the Elephant. Anytime the six-ton Elephant and the Rider disagree about which direction to go, the Rider is going to lose. The Rider is completely overmatched by the size and strength of the Elephant.

While powerful, the Elephant has a clear weakness. The Elephant is lazy and skittish, often looking for a quick payoff (ice cream cone) over a long-term payoff (being thin). When change efforts fail, it’s usually the Elephant’s fault. The kinds of change we typically want for ourselves, or our organizations, involve short-term sacrifices which do not appeal to the Elephant’s need for instant gratification. The Rider simply cannot keep the Elephant on the road long enough to reach the destination, i.e. the long-term payoff at the end of the road.

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1 Taken from *Switch: How to Change Things When Change is Hard* by Chip and Dan Heath
If the Elephant is driven by a hunger for instant gratification and is easily distracted, what strengths can the Rider bring? The Rider is intellectual and can easily conjures multiple alternatives with ease. This strength allows the Rider ability to think long-term, plan beyond the moment and counters the weakness of the Elephant.

But this strength is also a weaknesses for the Rider. When given the opportunity, the Rider tends to overanalyze and overthink a situation. Riders can easily become fascinated by multitude of options before them while the Elephant peacefully waits for instruction. If at rest, the Elephant stays at rest.

Chances are, you know people with Rider problems. Perhaps you have a friend who can agonize for twenty minutes about what to eat for dinner? Or a colleague who can brainstorm about new ideas for hours but can’t ever seem to make a decision? These are examples of when the Rider is in complete control. Nothing gets done.

But take a moment to reconsider that the Elephant isn’t always the bad guy. The Elephant has an enormous reservoir of strength unavailable to the Rider - emotion. Emotion is the turf of the Elephant. That fierce instinct you have to protect your kids against harm - that’s the Elephant. That spine-stiffening you feel when you need to stand up for yourself - that’s the Elephant. Emotions like love, compassion, sympathy and loyalty are all powerful tools for the Elephant.

Even more important, if you’re contemplating a change, the Elephant is the one who gets things done. To make progress towards any goal, whether it’s noble or crass, requires the energy and drive of the Elephant. But once the Elephant is engaged, where does it go? The answer to that question brings us back to the Rider.

In order for change to stick, you’ve got to reach both the emotional Elephant and the rational Rider. The Rider provides the planning and the direction while the Elephant provides the energy. If you reach the Riders of your teams, but not the Elephants, team members will have understanding without motivation. If you reach their Elephants, but not their Riders, the team members will have passion without direction.

In both cases, the flaws of the Elephant and the Rider can be paralyzing. A reluctant Elephant and a wheel-spinning Rider will ensure that nothing changes. But when Elephants and Riders move together, change can come easily. Once they are working in concert, the last step to real change is to clear the way for both of them to succeed, or Shape the Path.

In summary, for change to occur you must do three things: direct the Rider, motivate the Elephant and Shape the Path.
Table 1 - the nine factors which support lasting change based on the book, *Switch: How to Change Things When Change is Hard*, written by Chip and Dan Heath.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
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<tbody>
<tr>
<td>DIRECT the Rider</td>
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<tr>
<td>FOLLOW the BRIGHT SPOTS. Investigate what’s working around you and clone it.</td>
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<tr>
<td>SCRIPT the CRITICAL MOVES. Don’t think big picture, think in terms of specific behaviors that people can apply now.</td>
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<tr>
<td>POINT to the DESTINATION. Change is easier when you know where you’re going and why it’s worth the effort.</td>
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| Motivate the Elephant | |
| FIND the FEELING. Knowing something isn’t enough to cause change. Make people feel something about the need to change. |
| SHRINK the CHANGE. Break down the change until it no longer spooks the Elephant - think small, bite-sized chunks of change that are easy to consume. |
| GROW your PEOPLE. Cultivate a sense of identity and instill a growth mindset. Help people understand they are capable of change. |

| Shape the Path | |
| TWEAK the ENVIRONMENT. When the situation changes, the behavior changes. So change the situation. |
| BUILD HABITS. When behavior is habitual, it’s “free” - it doesn’t tax the Rider. Look for ways to encourage habits. |
| RALLY the HERD. Behavior is contagious. Help it spread. |

Now that you have finished with the article from Chip and Dan Heath, play the $100 Test on your own. Show us how you would invest your $100 with the goal of bringing about lasting change to your organization using Scrum.

Considering the nine factors identified above: Where would you invest your money? How much would you invest in these factors? Be sure to explain (with a sentence or two) the reason(s) why you invested your money as you did.
Instructions: complete the worksheet below that shows how you would invest your $100 to bring about lasting change in your organization.

**Switch $100 Test**

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<thead>
<tr>
<th>Factor</th>
<th>$</th>
<th>Why?</th>
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<tbody>
<tr>
<td>Follow the Bright Spots</td>
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<tr>
<td>Script the Critical Moves</td>
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<tr>
<td>Point to the Destination</td>
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<tr>
<td>Find the Feeling</td>
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<tr>
<td>Shrink the Change</td>
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<td>Grow your People</td>
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<td>Tweak the Environment</td>
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<td>Build Habits</td>
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<tr>
<td>Rally the Herd</td>
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