TWiG Online Facilitator's Guide V1.0

What is TWiG Online?

In contrast to more elaborate simulations, TWiG is a simple way to let the players get an idea of working in a WiP limited system. You already need to know the basics behind WiP limited pull systems (e.g. have run the ship-building simulation in advance) in order to play it. This will reinforce that knowledge.

You can't win ANYTHING - only become wiser.

Attributions

"TWiG - The WiP Game" is a lightweight Simulation of a WIP limited pull system developed by Klaus Leopold (https://twitter.com/klausleopold). The online edition of TWiG at https://analytics.actionableagile.com/twig was adapted from the tabletop version by ActionableAgile creator Daniel Vacanti (https://twitter.com/danvacanti).

This facilitator's guide is adapted by Julia Wester (https://twitter.com/everydaykanban) from the TWIG Facilitator's Guide for the tabletop edition published by Florian Meyer (https://twitter.com/fcdm) & Klaus Leopold and from information from Daniel Vacanti.

Game Planning

Team size
The optimal team size is 3-4 players per group, though you can play TWiG online alone or in pairs. If you have more than four, the game may have too much discussion and take too much time than you have allotted.

Materials
- ❏ One computer with Google Chrome installed per team
- ❏ Internet Access
- ❏ Link to the game (https://analytics.actionableagile.com/twig)
- ❏ The Participant Guide PDF (last page of this document)

Timing
60-90 minutes. Each round of actual game play should be capped at 20-25 minutes to allow for appropriate debrief. Don't skimp on the debrief!

The tabletop version of TWiG is meant to be played and debriefed in a 90-minute workshop block. TWiG Online can be played more quickly as the game does all of the data tracking and metrics creation for you. This means that you can either play more than one round of TWiG Online in a 90-minute workshop block, or you can choose to only play one round within 60 minutes - again, including intro, questions and debrief.

App Settings
Ask everyone, when they get in their teams, to click on the cog wheel icon and ensure that the first three items are checked:
- **Edit WIP Limits** - allows you to edit column WIP limits as directed in the game
- **Enforce WIP Limits** - prevents you from putting too many items in one column
- **Maximize WIP Limits** - prevents you from having too few items in a column. This reinforces WIP as a signal to pull, not just a limit to prevent too much work.

Suggestions when Playing 2 Rounds instead of 1.
- Ignore instructions on the "end of day" card requesting you change your WIP limits. (both rounds).
- Before starting Round 2, ask teams to decide on a new WIP limit strategy. Make sure they think through what result they expect to see with their new strategy
  - Challenge at least one team to change WIP limits to 2 or less on each column.
- Open a new browser tab for Round 2 so you can compare analytics for both games side by side.

Important information about Game Data / Analytics
The data from each game is stored in the browser's local storage. If you use the same browser, you should be able to pull up the previous game data at a later date as long as the data has not been cleared from the browser storage. To be extra careful, you can download the game data as a CSV file and reupload it later.

The analytics portion of the game can retain multiple games in history - 4 at minimum.

Game Play

The Board
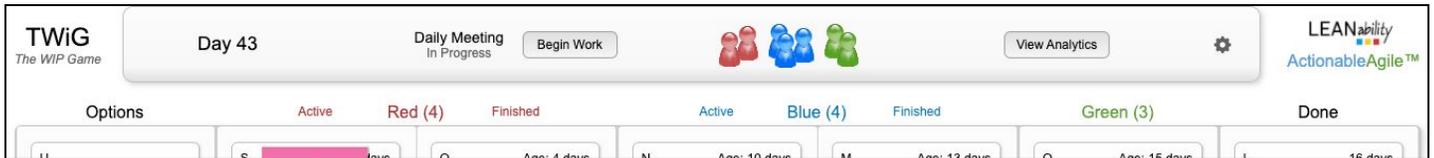
The board consists of four columns: OPTIONS, Red, Blue, Green and DONE. The Red, Blue, and Green columns represent an activity that work moves through on the way to completion. *These column names are generic to prevent unnecessary focus on the column names and so that it feels relevant to those in varied domain.*

The board represents the work of a team that is on their 43rd day of working together. There is some work completed (you'll see it on the analytics later), some in progress and some not yet started.

The Cards

The cards on the board represent individual work items. All items have been estimated and the amount of work they will require in each activity is shown on the card.

The first line shows the amount of "Red" work that's needed. The second line shows the amount of "Blue" work and the third line shows the amount of "Green" work that is needed.

The Team Members & Completing Work

The meeples (team members) colors are associated with the activity they specialize in. Red meeples specialize in the red activity and so forth.

At the beginning of each day, the Team Members (and you) hold a meeting. You decide which Team Member will work on which card that day by dragging the meeple to the card. Once you do this for every Team Member, you can choose to Begin Work for the day.

When you begin work, the app essentially rolls a fair six-sided die for each meeple. The number from the roll determines how much work will get marked off of the card that Team Member is working on that day. However, there is a catch related to specialization!

If a team member is working on a card in the column of their specialty, they will be allowed to mark off the number of boxes that matches the number on the invisible die. However, if they are helping out in another area, they only get to deduct boxes totaling half the die roll. So, if you roll a 6, you get to mark off 3 boxes.

All numbers are rounded down so if you roll a 3 and you're in another specialty, you'd get to mark off one box. If you roll a 1 and you are in another specialty, you get to mark off *zero* boxes. :(

Blocker cards

The longer your work stays in progress, the more opportunities there are for blockers to arise. This game emphasizes this to make that point. (It wants to encourage you to finish quickly once you start.) Each day blockers will be randomly placed on a card in progress. The blocker represents more work in the specialty of the column the card is in. So, if the blocker is on a card in the Blue column, that represents more Blue work to do. All rules above apply. If the die roll alleviates the blocker, it will disappear and any extra work will be applied to the underlying card.
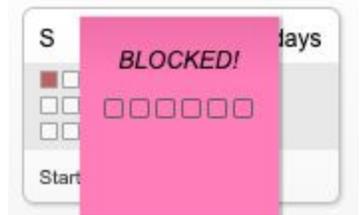
Analytics and Debrief

The groups should review their metrics after their game is over by clicking on the "View Analytics" button to the right of the meeples. These analytics are powered by the popular flow metrics tool ActionableAgile.
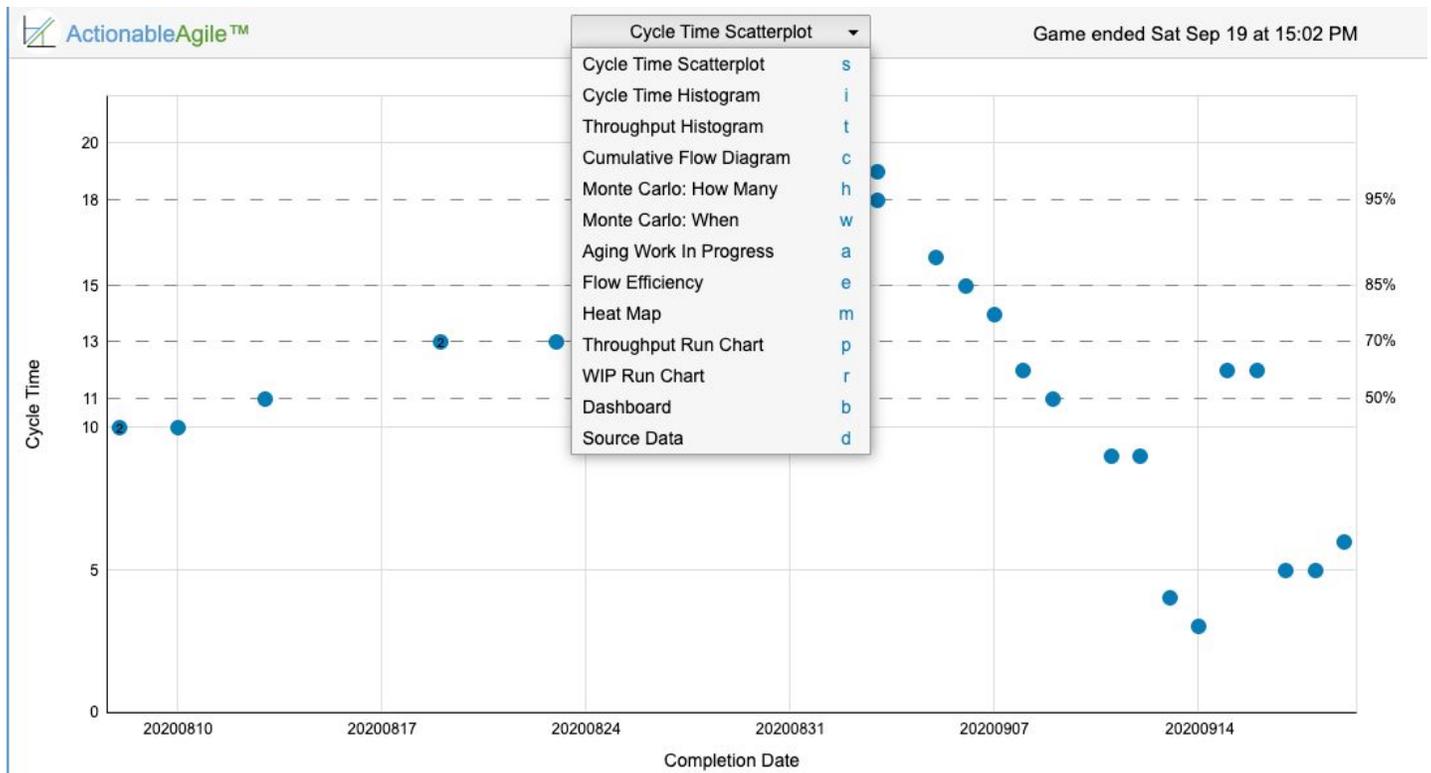
In the tabletop version of the TWiG game you manually create a:
- Cumulative Flow Diagram *(called Stability CFD)*
- Cycle Time Scatterplot *(called Realization Time Scatterplot)*
- Throughput Scatterplot
- Cycle Time Histogram *(called Realization Time Histogram)*

In TWiG Online, these charts, and many others, are created for you. While there is value in learning how to create these charts, it is not necessary for the core learning objectives. Saving time on creating charts allows more time to do things like debrief or do a second round using a different tactic and comparing outcomes to the first.

If you would like to manually create the charts, you can have the teams do that as they go along using the metrics sheets available for download with the TWiG tabletop editions (https://www.leanability.com/en/twig/). You also have the source data as a chart option in ActionableAgile if you'd like to do them later.

The charts include the data for the first 42 days (before the game starts) and from day 43 to 56 (the days in the game). The gap in the data in the middle of the image below is the spot where the game begins.
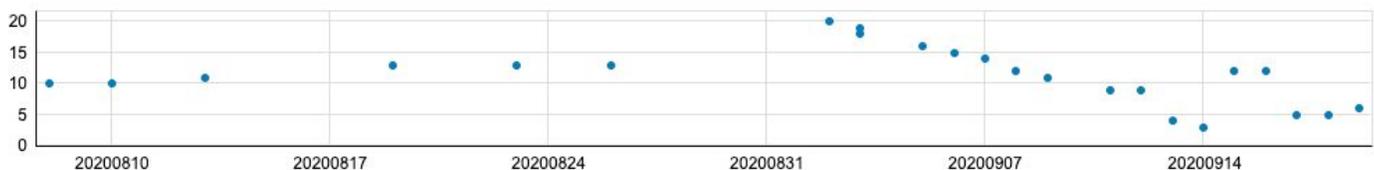
Discussion ideas:
Please suggest additional or alternative questions!
- How was that?
- How well did you collaborate as a team?
- Did you notice any similarities and differences to your current work environment?
- How many cards did you complete? (**Throughput Histogram**)
- How predictable were you? (**Cycle Time Scatterplot**)
  - Where was your 85% line? What might you do going forward to lower it?
- How old did your work get? (**WIP Aging Chart**)
  - Where are the dots?
  - Turn on colors in the pace percentiles. Are they in the "safe" zones?
- How did you manage the special cards?
  - Are these work items familiar? How can we visualize and handle these kinds of work items?
  - Can you see the effect of the special cards in your data? (**Cycle Time Scatterplot**)
- Did you pair (in other words: work with multiple dice on one item) often? Why? Why not?
- Did you place meeples in non-specialists areas? Why? Why not?
- Did you have many blockers? What was your approach to dealing with them? Why? (**Cycle Time Scatterplot** - to see the impact, turn on "Highlight Blocked Items" in chart control)

- How smoothly did work flow through your workflow? **(Cumulative Flow Diagram)**
- What else can you see from your data (e.g., trends, extreme outliers, etc.). Check out these charts:
  - **Cycle Time Scatterplot**
  - **WIP Aging Chart**
  - **Throughput Histogram**
  - **Cumulative Flow Diagram**
- What insights or questions do you have?
- **Additional questions when playing 2 rounds:**
  - What is different in your charts between round 1 and round 2? Why?
  - Was your hypothesis accurate or now? Why?
  - Did you have more blockers in the 2nd round or the 1st? Why?
  - What is the difference in the **WIP Aging chart** in the 1st and 2nd rounds?
  - What would you do next if you were to play again?

Rules & FAQ

The Underlying Rule of Thumb

Whenever you have a question regarding rules, ask yourself: "What would I do in real life?"
TWiG tries to simulate real life (except for the exaggerations for teaching purposes) and therefore, your game play should be as close to real life as possible!

Frequently Asked Questions

Q: Why is the Score Halved when I don't work in my specialty?
A: Just like in real life, a non-specialist does not bring the same performance as a specialist.

Q: Can we put multiple Team Members on one card?
A: You can put several Team Members on one ticket. If three or more are placed on a ticket, the points from the third die are halved. The logic behind it? Pairing is a good thing, but it does not scale linearly. For example, if 20 people are working on a job, they are not 20 times as fast.

TWiG Online - Participant Guide

Daily Routine

Daily Meeting

- Discuss tactics for the day with your team. What needs to be considered before making the plan?
- Ensure enough cards are in each column (you can't move backwards so choose wisely!)
- Assign Meeples to the cards you decided they should focus on.
- Click "Begin Work"

Working

- Blocker cards are randomly applied to cards on the board.
  - There is a 12% chance of a blocker on any item in progress to introduce variability.
  - The column the blocked item is in determines the type of work required to remove the blocker.
  - When the blocker is completed, any remaining effort will be applied to the underlying card.
- Computer "rolls a fair, six-sided dice" for each worker and marks off completed work.
  - The value of the dice roll for any worker represents the effort they have available to spend that day. It differs from day-to-day just like in real-life.
  - If the meeple is in it's area of speciality (same color column) they get full value of the roll.
  - If the meeple is in a different color column, helping out in another specialty, the roll is halved (and rounded down when appropriate). Why? A non-specialist does not bring the same performance as a specialist.
  - You can put several workers on the same card, keeping in mind the dice roll rules.

End of Day

- Read the "End of Day" card. You can't get back to this so read it carefully.
- You can check your analytics by clicking "View Analytics." Click "Return to TWIG" to get back to TWiG.
- Reflect on what went well, what didn't and what you might do differently the next day.

REPEAT through Day 56.

The Most Important Rule: Whenever you have a question about how you should make decisions in the game, **ask yourself "What would I do in real life?**