Actionable Agile Metrics for Predictability
“When will it be done?”
“When will it be done?”

Date (number of days)

Elapsed Time
“When will it be done?”

Date (number of days)

Story Points / Velocity
Stop me if you’ve heard this one before...
“Relative Complexity is the best predictor of how long it takes an item to complete”
<table>
<thead>
<tr>
<th>Stories</th>
<th>Points</th>
<th>InProgress</th>
<th>Ready for QA</th>
<th>QA</th>
<th>Ready for Acceptance</th>
<th>Acceptance</th>
<th>Holding</th>
<th>Total Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Closed</td>
<td>157</td>
<td>182</td>
<td>2.82</td>
<td>0.57</td>
<td>1.34</td>
<td>0.53</td>
<td>0.04</td>
<td>0.55</td>
</tr>
<tr>
<td>0 Points</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half Point</td>
<td>85</td>
<td>43</td>
<td>0.95</td>
<td>0.48</td>
<td>0.59</td>
<td>0.47</td>
<td>0.02</td>
<td>0.35</td>
</tr>
<tr>
<td>1 Points</td>
<td>25</td>
<td>25</td>
<td>2.60</td>
<td>0.56</td>
<td>1.40</td>
<td>0.36</td>
<td>0.04</td>
<td>0.44</td>
</tr>
<tr>
<td>2 Points</td>
<td>12</td>
<td>24</td>
<td>5.50</td>
<td>0.42</td>
<td>2.00</td>
<td>0.33</td>
<td>0.00</td>
<td>0.42</td>
</tr>
<tr>
<td>3 Points</td>
<td>19</td>
<td>57</td>
<td>8.00</td>
<td>1.21</td>
<td>4.47</td>
<td>1.32</td>
<td>0.05</td>
<td>1.95</td>
</tr>
<tr>
<td>5 Points</td>
<td>5</td>
<td>25</td>
<td>9.20</td>
<td>0.40</td>
<td>2.60</td>
<td>0.20</td>
<td>0.00</td>
<td>0.60</td>
</tr>
<tr>
<td>8 Points</td>
<td>1</td>
<td>8</td>
<td>25.00</td>
<td>0.00</td>
<td>2.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>12 Points</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Why do we even bother with Story Points?
I’m going to suggest something radical…
As an example:

How long does it take you to get to work in the morning?
“It depends...”
Here's a spot!!
Here’s a spot!!
Try an experiment for me...
Try the same thing for your process
<table>
<thead>
<tr>
<th>Backlog</th>
<th>Analysis</th>
<th>Develop</th>
<th>Test</th>
<th>Deployed</th>
</tr>
</thead>
</table>

- 3 yellow sticky notes in the Backlog column

Start Timer

Stop Timer
This chart is called a (Cycle Time) Scatterplot
If you track *nothing else*, track the date that an item starts and the date that an item completes (for all work items)
That will give you a measure of the flow metric of Cycle Time*
Cycle Time is the amount of elapsed time it takes for a given work item to complete.
“When will it be done?” for a single item is best answered by Cycle Time.
“Huh?”
How does generating a chart like this help us answer “When will it be done”? 
How do we make sense of this randomness?
Your process is “random”. Therefore, you can’t think deterministically. You need to think probabilistically.
What does it mean to think probabilistically?
Let’s try another experiment...
Thinking probabilistically means acknowledging that there is more than one possible future outcome.
How many people can we “expect” to be standing after 3 flips?

12.5%

Does that mean 12.5% was the only possible outcome?
<table>
<thead>
<tr>
<th>Backlog</th>
<th>Analysis</th>
<th>Develop</th>
<th>Test</th>
<th>Deployed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Start Timer

Stop Timer
<table>
<thead>
<tr>
<th>Backlog</th>
<th>Design</th>
<th>Develop</th>
<th>Test</th>
<th>Deployed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Will Item #3 end up as…

Exactly this dot?

Or Exactly this dot?

Exactly this dot?
There is more than one possible outcome for Item #3 while it is sitting in the backlog.
What are the possible outcomes?
How do we make sense of this “randomness”? 
50\textsuperscript{th} Percentile = 6 days or less
85th Percentile = 15 days or less
95th Percentile = 22 days or less
Scatterplot Percentiles (making a forecast)

95th Percentile = 22 days or less

85th Percentile = 15 days or less

50th Percentile = 6 days or less
85th Percentile = 33 days or less
85\textsuperscript{th} Percentile = 13 days or less
What factors affect Cycle Time?
Avg Cycle Time = \frac{Avg WIP}{Avg Throughput}
What else?
Poor Pull Policies, Blockers, External Dependencies, ...
“Actionable Agile Metrics for Predictability”

https://leanpub.com/actionableagilemetrics
For next time...

What does a 19^{th} century Yorkshire cotton industrialist have to do with the Manhattan Project?
Thank-you!

All charts created by:

Actionable Agile
Take Control