Measuring for Results:

Metrics and Myths

Peter Hundermark
Certified Scrum Coach and Trainer
Project Success Rates

- 32% Succeeded
- 24% Failed
- 44% Challenged

Succeeded
- On time
- On budget
- Required features

Challenged
- Late
- Over budget
- Missing features

Failed
- Cancelled
- Never used

Source: Standish Group CHAOS Summary 2009
Agile is Value-Driven

Predictive

Plan Driven

Adaptive

Value Driven

Constraints
Requirements
Cost
Schedule

Estimates
Cost
Schedule
Features
What is Valued?

64% rarely or never used

20% frequently used

Source: Standish Group (2002)
Value of Time

- Incremental delivery
- Traditional single delivery

Real Value Delivered / Earned vs. Time

Delivery 1 - 5
Delivery 3
Delivery 4
Delivery 5
Value gap

Tuesday 01 September 2009
knowledge workers

measure themselves
Tell me how you will measure me and I’ll tell you how I will behave.
On the Folly…

We hope for…
- Long-term growth
- Commitment to quality
- Teamwork and collaboration
- Innovative thinking and risk taking
- Employee involvement and empowerment
- Candour: surfacing bad news early

But we often reward…
- Quarterly earnings
- Shipping with defects
- Individual effort
- Proven methods and not making mistakes
- Tight control of operations and resources
- Reporting good news, whether it’s true or not Agreeing with the boss, whether or not (s)he’s right!

Adapted from Steven Kerr “On the folly of rewarding A, while hoping for B”, Academy of Management Executive (1995 vol 9 no 1)
Metrics and Myths

Good Agile Metrics
Good Agile Metrics

Reinforce desired behaviour
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
- Easy to collect
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
- Reveal their context
- Easy to collect
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
- Easy to collect
- Reveal their context
- Fuel meaningful conversation
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
- Easy to collect
- Reveal their context
- Fuel meaningful conversation
- Amplify learning
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
- Easy to collect
- Reveal their context
- Fuel meaningful conversation
- Amplify learning
- May measure value or process
Good Agile Metrics

- Reinforce desired behaviour
- Measure results not output
- Measure trends
- Vital few
- Easy to collect
- Reveal their context
- Fuel meaningful conversation
- Amplify learning
- May measure value or process
- Good enough quality
Leading and Lagging
Leading and Lagging

Leading indicator
- Signals future events
- Changes before the event
- E.g. amber traffic light
Leading and Lagging

Leading indicator
- Signals future events
- Changes before the event
- E.g. amber traffic light

Lagging indicator
- Reports past events
- Changes as an outcome
- E.g. unemployment
Measurement Dimensions

Value (to Customer)

Predictability (Schedule)

Collaboration (Process)

Quality (Product)

Source: Pete Behrens, “Measuring Agility - Top 5 Metrics and Myths” (2009)
Customer Surveys

Many opportunities over time

- Baseline and measure quarterly

Qualitative and quantitative

- Responsiveness
- On-time delivery
- Value
- Quality
- Support

Source: Pete Behrens, “Measuring Agility - Top 5 Metrics and Myths” (2009)
Customer Surveys

☑ Ask: “How likely are you to recommend this product or service to a friend?”

☐ Scale 0 - 10
   - 9 - 10 Promoters
   - 7 - 8 Passive
   - 0 - 6 Detractors

☐ Net promoters score
   - (promoters - detractors) ÷ sample size

Adapted from Sanjiv Augustine and Roland Cuellar, “Agile Metrics for Senior Managers & Executives” (2009)
Customer Surveys

Ask: “How likely are you to recommend this product or service to a friend?”

- Scale 0 - 10
  - 9 - 10 Promoters
  - 7 - 8 Passive
  - 0 - 6 Detractors

Net promoters score

- (promoters - detractors) ÷ sample size

Net promoters score: 

\[
\frac{(27-14)}{57} = 23\%
\]

Adapted from Sanjiv Augustine and Roland Cuellar, “Agile Metrics for Senior Managers & Executives” (2009)
Velocity

Sprints

Velocity

1 2 3 4 5 6 7 8

0 10 20 30 40

Predict
Leading

Tuesday 01 September 2009
**Myth**

Higher velocity is always a good thing

**Truth**

Risk of incurring technical debt

**Do**

Add technical debt to product backlog
Monitor and reduce over time
Velocity measures productivity or value

Truth

- Story points are relative
- Cannot compare velocity
- Teams are different
- Size measures complexity

Do

- Use the metric as designed

Source: Pete Behrens, “Measuring Agility - Top 5 Metrics and Myths” (2009)
100% Committed vs. actual drives estimation accuracy

**Truth**
- Teams learn to be safe
- Leads to lower productivity

**Better**
- What features did we deliver?
- Why did we miss one?
- What is the impact?
  - Learning
Sprints fail

Truth

Less probable events $\rightarrow$ more information

Maximum information at 50% probability

Knowledge from low-probability events

Rate of Features Delivered

Product or Release
Burnup / Burndown Chart

Leading
Predict
Metric

Story points delivered
Story points remaining

Tuesday 01 September 2009
Running Tested Features / Running Automated Tests

Technical Debt

What is technical debt?

Why does it occur?

Add stories to backlog

Team is responsible!
## Work-in-process

<table>
<thead>
<tr>
<th>Story</th>
<th>ToDo</th>
<th>WIP</th>
<th>Done</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Stories in-process*

Aim for ≤ 2

No silos or blockages!
### Story Cycle Time

<table>
<thead>
<tr>
<th>Story Points</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

**Average time to complete**
Aim for around 3 days
No lagging tests!
Basic Agile Metrics

Value
- Customer surveys

Collaboration
- Work-in-process

Predicability
- Velocity
- Burnup / Burndown
- RTF / running automated tests

Product Quality
- Technical debt

Customer surveys

25

Tuesday 01 September 2009
Extending the Metrics

Value
- Customer surveys

Collaboration
- Story cycle time
- Work-in-process

Predicability
- Velocity
- Burnup / Burndown
- RTF / running automated tests

Product Quality
- Technical debt

Customer surveys

Tuesday 01 September 2009
Extending the Metrics

- **Value**
  - Customer surveys

- **Collaboration**
  - Story cycle time
  - Work-in-process

- **Predicability**
  - Velocity
  - Burnup / Burndown
  - RTF / running automated tests

- **Product Quality**
  - Technical debt

Tuesday 01 September 2009
Extending the Metrics

Value
- Customer surveys
- Team surveys
- Work-in-process
- Story cycle time

Collaboration

Predicability
- Velocity
- Burnup / Burndown
- RTF / running automated tests
- Technical debt

Product Quality

Customer surveys
Team surveys
Work-in-process
Story cycle time

Customer surveys
Team surveys
Work-in-process
Story cycle time

Tuesday 01 September 2009
Extending the Metrics

Value
- Customer surveys
- Team surveys
- Story cycle time
- Work-in-process

Collaboration

Predicability
- Velocity
- Cost per sprint / point
- Burnup / Burndown
- RTF / running automated tests
- Technical debt

Product Quality

26 Tuesday 01 September 2009
Extending the Metrics

Value
- Customer surveys
- Real value delivered

Predicability
- Velocity
- Cost per sprint / point
- Burnup / Burndown
- RTF / running automated tests

Collaboration
- Team surveys
- Story cycle time
- Work-in-process

Product Quality
- ROI / NPV
- Technical debt
- Customer surveys
- Team surveys
- Burnup / Burndown
- RTF / running automated tests
- Technical debt
Peter Hundermark

Copyright in these slides is owned by Peter Hundermark and Scrum Sense CC. Some content and images may the copyright of others.

Further information on Scrum training and coaching is available from:

peter@scrumsense.com

www.scrumsense.com