Mark Michaelis
Chief Technical Architect, Author, Trainer

Metrics that Matter
A Myriad of Choices
About Us

Mark Michaelis
Chief Technical Architect, Author, Trainer

Microsoft MVP
Microsoft Regional Director
Professional Scrum Master II
Metrics that Matter
A Myriad of Choices
Why Measure?

See: Three signs of a miserable job by Patrick Lencioni

- anonymity
- irrelevance
- immeasurable

(job) misery
Symptoms Leading to Measurement

- Down time outside of SLA
- Customer dissatisfaction
- Long mean time to repair/recover (MTTR)
- Unacceptable Cost of change
-Missed deadlines
- High employee turnover
- Large releases that still lack expected functionality and quality
- ...
Have You Ever Experienced These?

- **Complexity** - Measuring too many things
- **Gamed** -Disconnected business and engineering measures
- **Misleading** - Emphasizing activities (process) rather than outcomes (products)
- **Rejected** - Prioritizing individual performance over team productivity
- **Simplistic** - Emphasizing values over trends
- **Dishonest** - Treating current values and targets as ground truth
Reduce Subjectivity
Improve Excellence
Focus on Strategy
Create Predictability

Why Measure?
A Myriad of Choices

List see
ltl.tc/DevOpsMetrics
A Myriad of Choices
A Categorization of choices

- Technology
  - Time to integrate
  - Time to implement per story point
  - Defects raised during UAT per release
  - Total manual time
  - Total automated time
  - Signal to noise ratio
  - Time to complete automated tests
  - Release/Sprint
  - Defects per area
  - Defects per engineer
  - Time to complete build
  - Test code coverage and effectiveness
  - System response time
  - Frequency of outages
  - Time outside SLA
  - Time to detect
  - Time to mitigate
  - Alerting efficiency
  - Outlier performance
  - Time to detect
  - Time to escalate
  - Similarity of production to test environments
  - Time to rollback
  - Frequency of failed deployments

- Business
  - Budget adherence
  - Wait time per work item
  - Lead time
  - Unexpected expense per release
  - Cost per release
  - Cost impact per... (items continue)
  - Total customers per time
  - Cost to acquire new customer
  - Frequency of release/change
  - Total time at company (retention)
  - Skills per team
  - Project satisfaction
  - Attitude towards continuous improvement
  - Technology experimentation
  - Team autonomy
  - Ownership vs. blame
  - # individuals per skill (measuring cross-skilling)

- People
  - Change per release
  - Lines of code
  - Lead time to understand requirements per story point
  - Time per story point
  - Frequency of undocumented changes
  - Time to communicate
  - Mean time to repair/recover (MTTR)
  - # experiments per release
  - Unplanned work per release
  - Work in progress per release/Sprint
  - Engineer
  - Work items
  - Story Points

- Process
  - Change per release
  - Lines of code
  - Lead time to understand requirements per story point
Lead Time = Process Time + Wait Time

Lead Time (LT):
The elapsed time from receiving a customer request to delivering on that request.

Process Time (PT):
Process time begins when the work has been pulled into a doing state and ends when the work is delivered to the next downstream customer.

Wait Time (WT):
The time that work sits idle not being worked.
A Organization Based Myriad of Choices

CXO

- Budget adherence, wait time per work item per release/time-period, Lead time, Unexpected expense per release, Cost per release, Frequency of customer tickets, Total new/leaving customers per time, Cost to acquire new customer, Frequency of release/change

Lead Time

Director/Manager

Engineering (System/Software/Operations)

Text
A Lifecycle of Metrics that Matter

DevOps metric importance may be relative to lifecycle stage

Lead time, Unexpected expense per release, wait time per work items, Average wait time per work item per release/time-period, Unexpected expense per release, cost per release, frequency of customer tickets, total customers per time, cost to acquire customer, frequency of release/change, Employee retention/turnover, Skills per team/project, Satisfaction, Attitude towards continuous improvement, Technology experimentation, Team autonomy, Ownership vs. blame, #Individuals per skill (measuring cross-skilling)
Perspective

Cost of new customer acquisition is more expensive than average profit per customer

Total customers are increasing
### Principles of Measurement

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transparent</strong></td>
<td>• Use metrics as a driver for creating excellence</td>
</tr>
<tr>
<td><strong>Relevant</strong></td>
<td>• Don’t create cost for stuff that isn’t relevant</td>
</tr>
<tr>
<td><strong>Automated</strong></td>
<td>• Automate measurement where possible, removing subjectivity and overhead</td>
</tr>
<tr>
<td><strong>Comparative</strong></td>
<td>• Metrics are relevant with respect to a trend (it’s not the raw numbers).</td>
</tr>
<tr>
<td><strong>Examined</strong></td>
<td>• Don’t look in the mirror and ignore what you see (Learn)</td>
</tr>
</tbody>
</table>
Measure Efficiency, Effectiveness and Culture to Optimize DevOps Transformations

White Paper

[link]
Moving to a Software-As-Service culture
Seven habits of effective DevOps

Dealing with high incident volumes
Measuring signal/noise ratio is the single best measure

Reducing complexity for integration environments
Simplification and modernization, the only two paths to reducing technical debt
Contributors

- Chivas Nambiar, Director DevOps Platform Engineering, Verizon
- Dominica DeGrandis, Director, Learning & Development, LeanKit
- Eric Passmore, CTO MSN, Microsoft
- Gene Kim, co-author of upcoming "DevOps Cookbook"
- Jeff Weber, Managing Director, Protiviti
- Mark Michaelis, Chief Technical Architect, IntelliTect
- Mirco Hering, DevOps Lead APAC, Accenture
- Nicole Forsgren, PhD, Director Organizational Performance & Analytics, Chef
- Sam Guckenheimer, Product Owner, Visual Studio Cloud Services, Microsoft
- Walker Royce, Software Economist
- You?
Takeaways

Metrics

- Create predictability
- Focus your strategy
- Transparent metrics trend towards excellence
- Are different for each team/person/organization
- Must be comparative
Thank you for your time.

Questions?
About Us

Mark Michaelis | IntelliTect
Chief Technical Architect, Author, Trainer

Mark@IntelliTect.com
fb.com/Mark.Michaelis
@MarkMichaelis