

Are we measuring the right thing?

2017



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Introduction





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Career Highlights: 22 Years at Lockheed Martin, 15 Years of Agile

Roles: Software Engineer, Systems Engineer, Test Engineer, Capture Manager, Engineering Program Manager (EPM), Subcontracts Program Manager (SPM), Program Manager (PM)

Certifications: Certified Enterprise Coach (CEC); Scrum Master (CSM), Certified Scrum Practitioner (CSP), Professional Scrum Master (PSM), Scaled Agile Program Consultant (SPC), Certified Systems Engineer (CSEP), Program Management Professional (PMP), Program Management Agile Professional (PMI-ACP), ITIL Foundations v3

Education:

Syracuse University B.S. Management Information Systems Rensselaer Polytechnic Institute M.S. Software Engineering



Agenda

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- 1. What is DevOps
- 2. Measures
- 3. Results from DevOps





1.0 DevOps

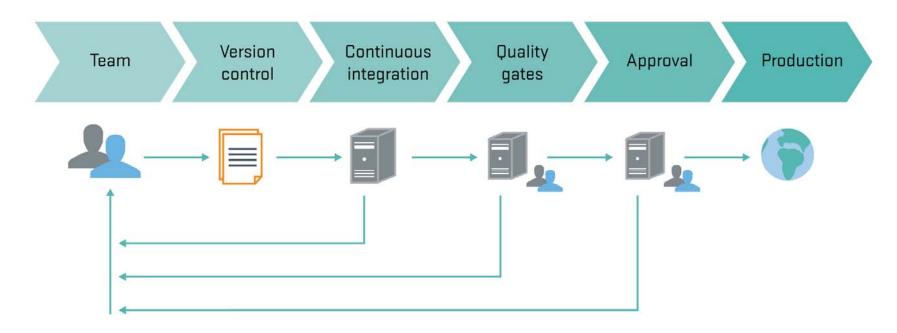


DevOps



DevOps is "a cross-disciplinary community of practice dedicated to the study of building, evolving and operating rapidly-changing resilient systems at scale."

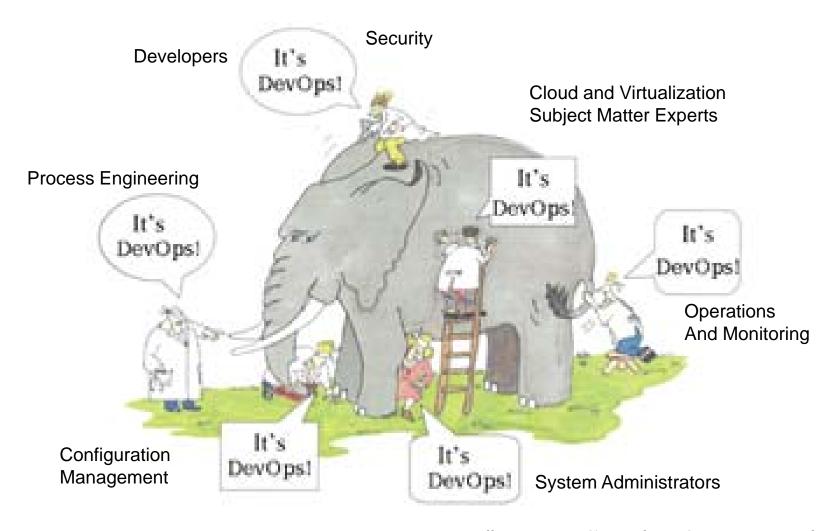
- Jez Humble





Why is it confusing?







https://blog.openshift.com/what-is-devops-really/

DevOps Manifesto



We are uncovering better ways of *running* systems by doing it and helping others do it. Through this work we have come to value:



DevOps Manifesto

Individuals and interactions	over	processes and tools
Working systems	over	comprehensive documentation
Customer collaboration	over	contract negotiation
Responding to change	over	following a plan



DevOps Principles



Our highest priority is to satisfy the customer through early and continuous delivery of valuable functionality Infrastructure is code and should be developed and managed as such

Welcome changing requirements even late in development, Agile processes harness change for competitive Advantage

Deliver functionality frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale

Business people, operations and developers must work together daily throughout the project.

Build projects
around motivated
individuals. Give
them the
environment and
support they need,
and trust them to
get the job done

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation

DevOps Principals



DevOps Principles (continued)



Working software successfully delivered by sound systems is the primary measure of progress.

Agile processes promote sustainable development.
The sponsors, developers, operations, and users should be able to maintain a constant pace indefinitely

Continuous attention to technical excellence and good design enhances agility

Simplicity--the art of maximizing the amount of work not done is essential. (KISS Principal) The best architectures, requirements, and designs emerge from selforganizing teams At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly

DevOps Principals



Why Measure



- Enable us to predict success against business goals
- Evaluate status against goal
- Establish baseline for future comparison





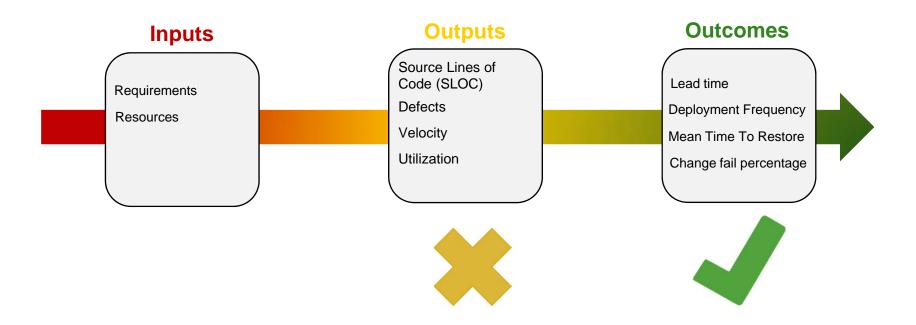
2.0 Measures







Measuring Output instead of Outcomes





Source Lines of Code (Sloc)



- Incentivizes team incorrectly
- Varies greatly outside of procedural languages
- Adversely affects estimation





Defects



- Incentivizes team to find bugs as opposed minimizing defects in implementation in first place.
- Not all code is created equal
- Does not reflect severity



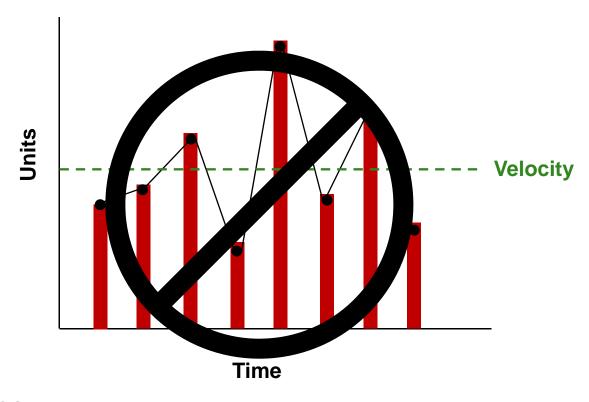


Velocity



- Team Dependent
- Teams game velocity

Velocity - Average number of Story points a team can complete Per time box.





Utilization



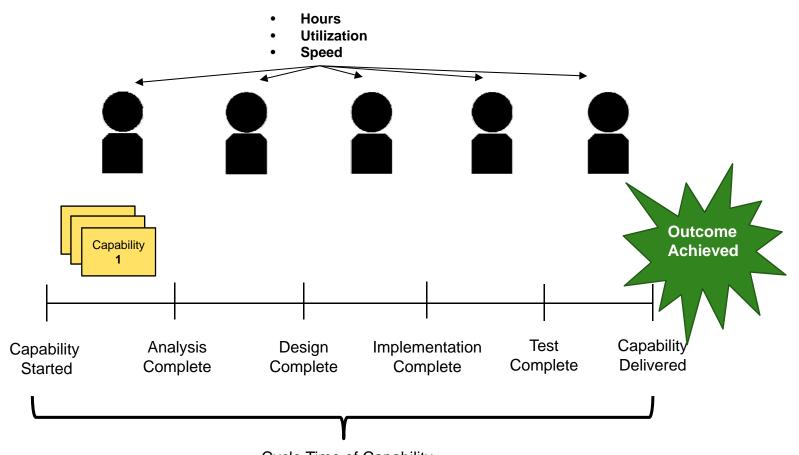
- Once utilization gets high there is not any spare capacity to handle unplanned work or changes.
- Reduction in quality levels
- Burnout

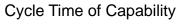




Measure Outcomes not people







You will get what you measure



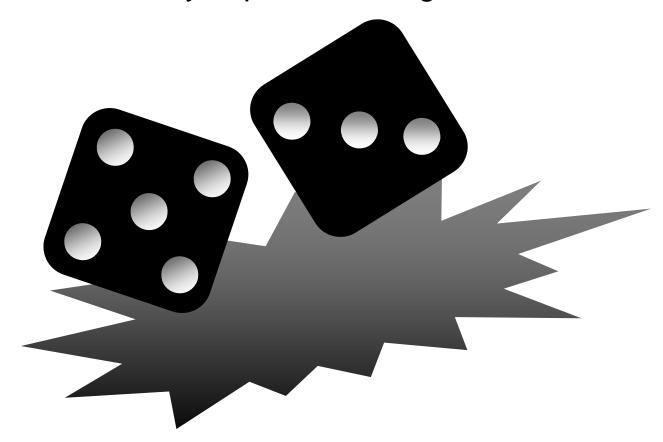




Measures will be gamed

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- Choose Carefully
- Pick metrics that only improve when gamed





What should I measure







What do businesses care about



- Profit
- Value Delivered
- Quality
- Cost
- Schedule



Good options



	Metric	Description
1.	Deployment Frequency	How frequent we deploy
2.	Lead Time	Time from a needed capability is identified to the time customer receives
3.	Change Failure Rate	% of Failures for every baseline change
4.	Mean Time To Recover (MTTR)	How quickly we recover from a failure



Deployment Frequency



Increase deployment frequency

- Drives value quicker
- Increases learning from feedback
- Drives down risk





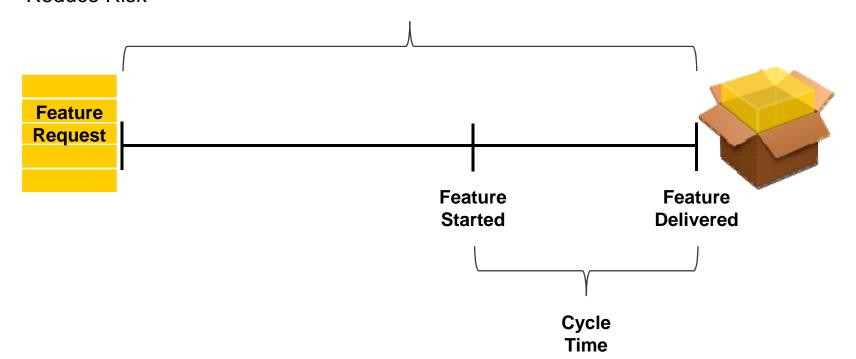
Lead Time



Shorter lead times:

- Increase profit
- Increase Quality

Reduce CostReduce Risk
Lead
Time



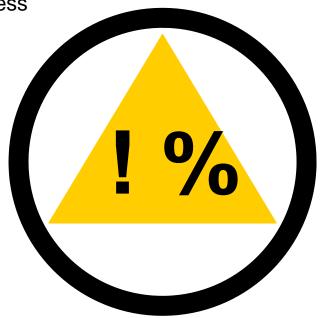


Change Fail Percentage



Reducing the percentage of failures when making changes to the baseline

- Increase flexibility to make change
- Reduce risk of changes
- Increase Value to our customers
- Higher profit for the business



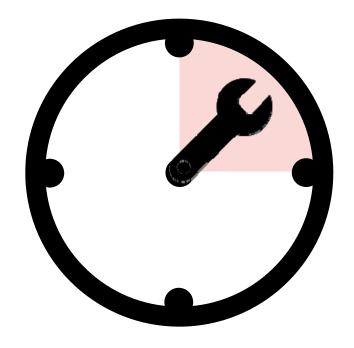


Mean Time to Restore



Shorter mean time to repair

- Increases stability
- Reduces the amount of time teams are working on unplanned work
- Reduce Life cycle cost for customers
- Increases profit for the business







3.0 Results from DevOps



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Results from high performing organizations

46x

More frequent deployments

5x

lower Change failure rate

96x

Faster recovery
From failures

440x

Shorter lead times



High performing organizations are twice as like to achieve or exceed business goals



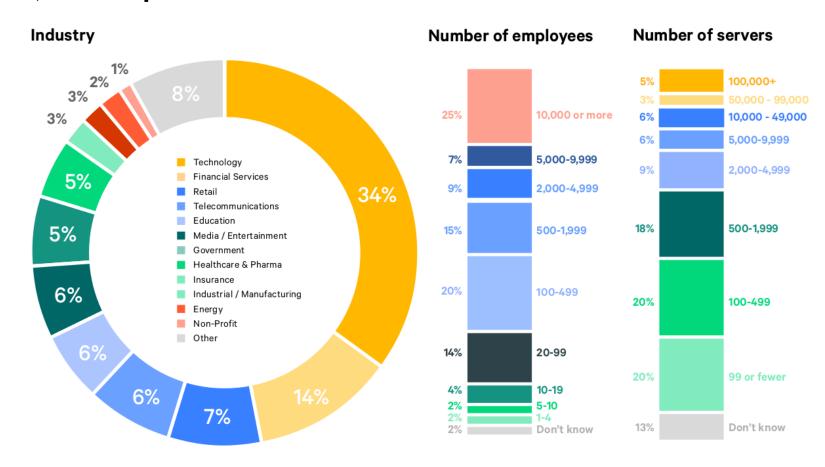
	Commercial	Non- Commercial
2 x	ProductivityProfitabilityMarket Share# of Customers	 Quantity of Products Operating Efficiency Customer Satisfaction Quality of Products Mission Goals



Who was measured



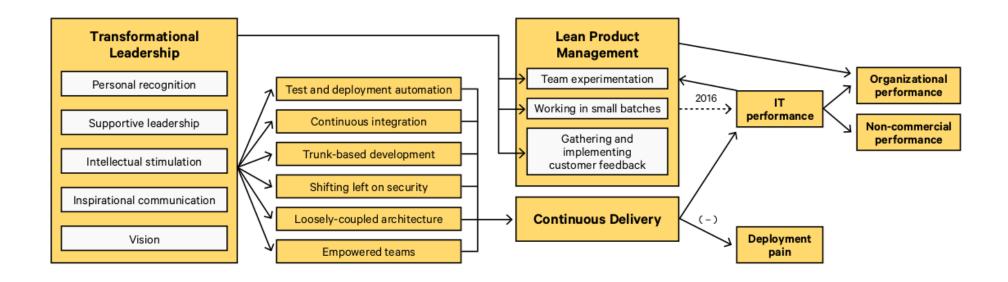
27,000 Responses





Performance Drivers to obtain these results









By 2020, half of the CIO's who have not transformed their teams will be displaced from their organizations' digital leadership teams.

Gartner

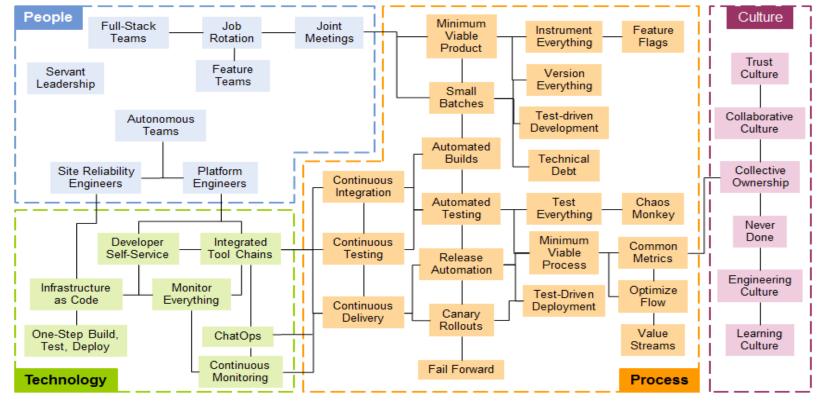






DevOps. Where Do We Start?

Figure 1. Gartner DevOps Model People Full-Stack Job Joint Minimum Instrument



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