LOCKHEED MARTIN

Are we measuring the right thing?

2017

NextGenLM

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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

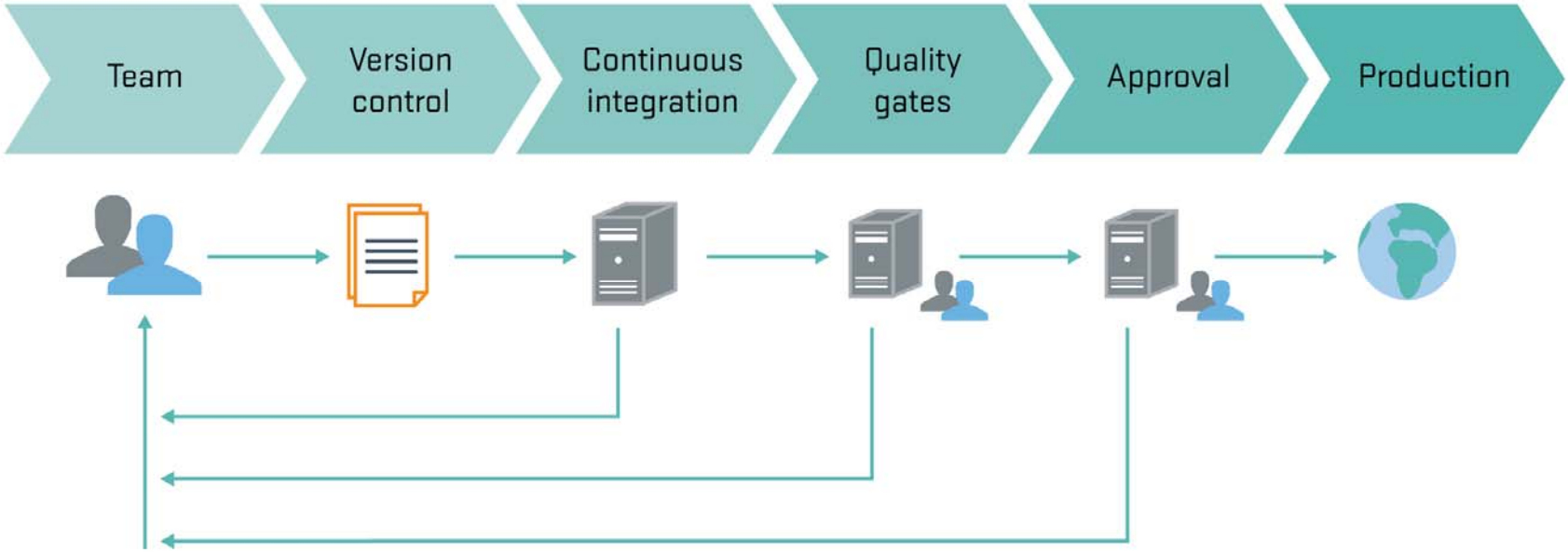
Agenda

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

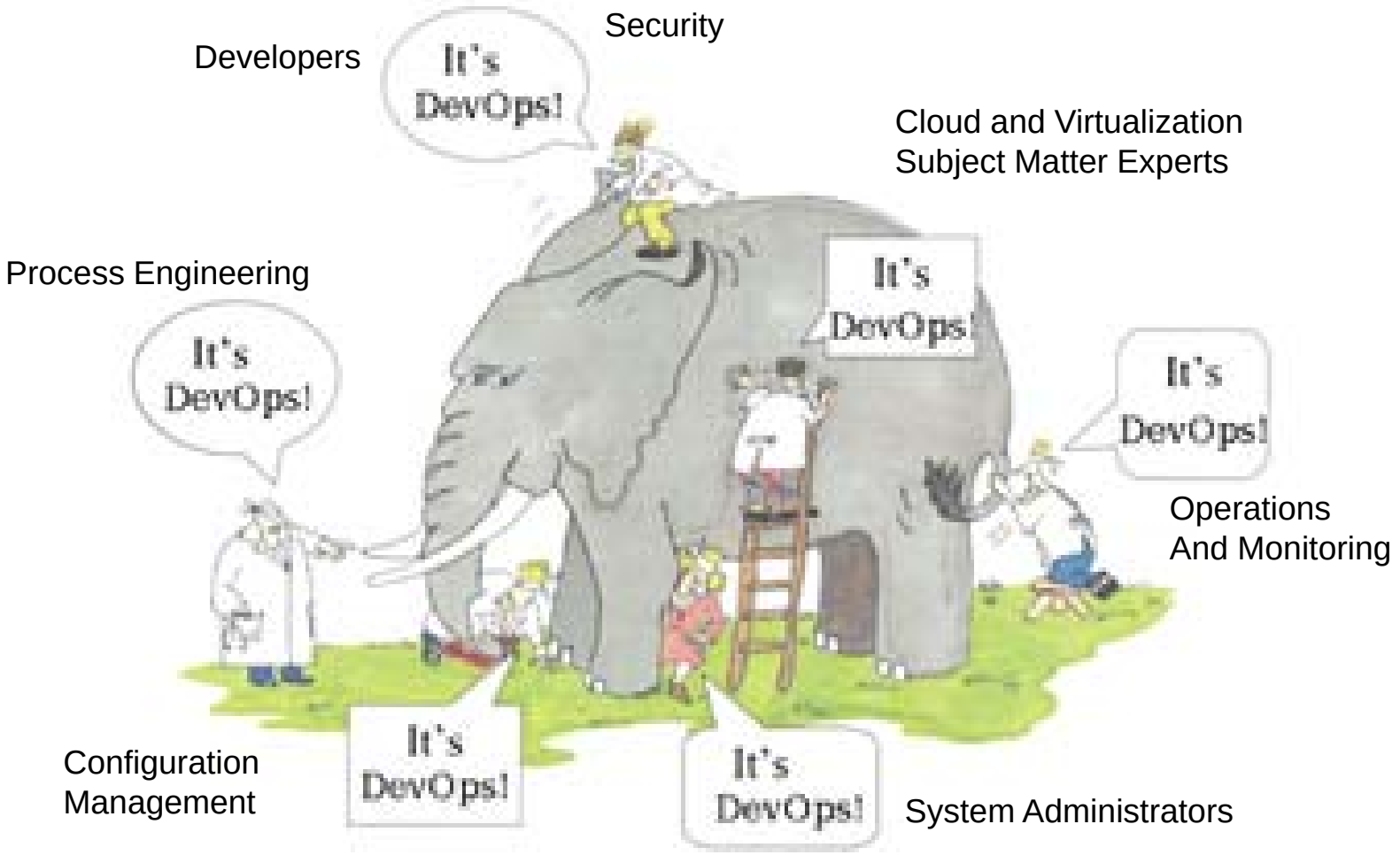
1.0 DevOps

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/

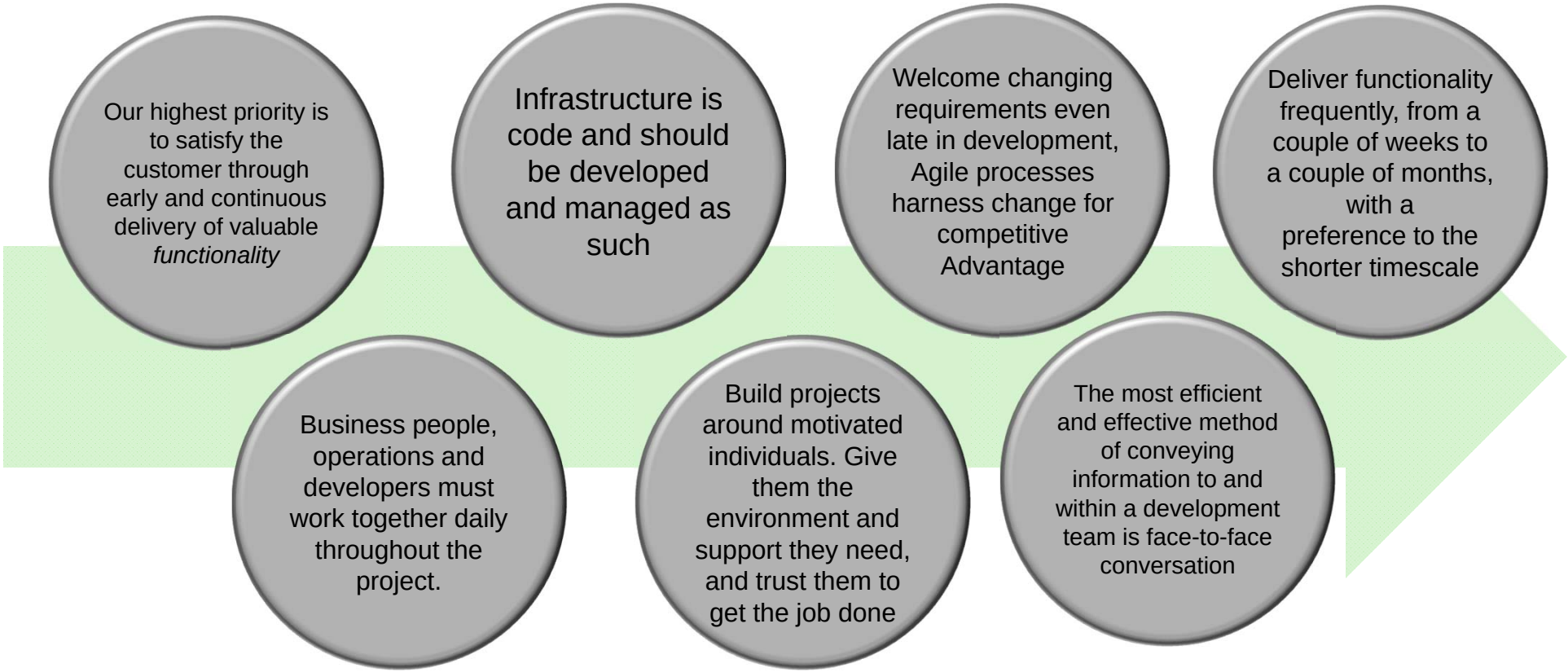
DevOps Manifesto

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

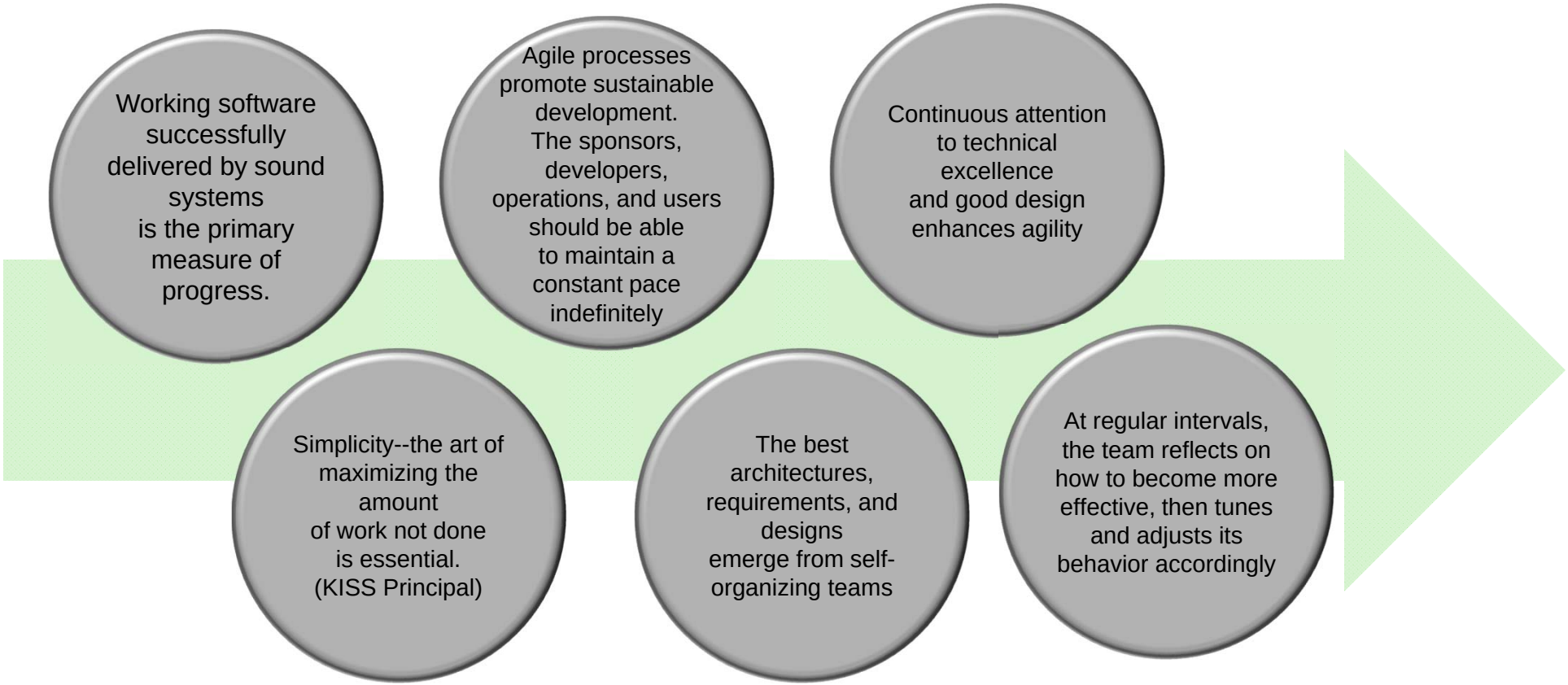
Individuals and interactions	**over**	**processes and tools**
Working systems	**over**	**comprehensive documentation**
Customer collaboration	**over**	**contract negotiation**
Responding to change	**over**	**following a plan**

DevOps Principles



DevOps Principals

DevOps Principles (continued)



DevOps Principals

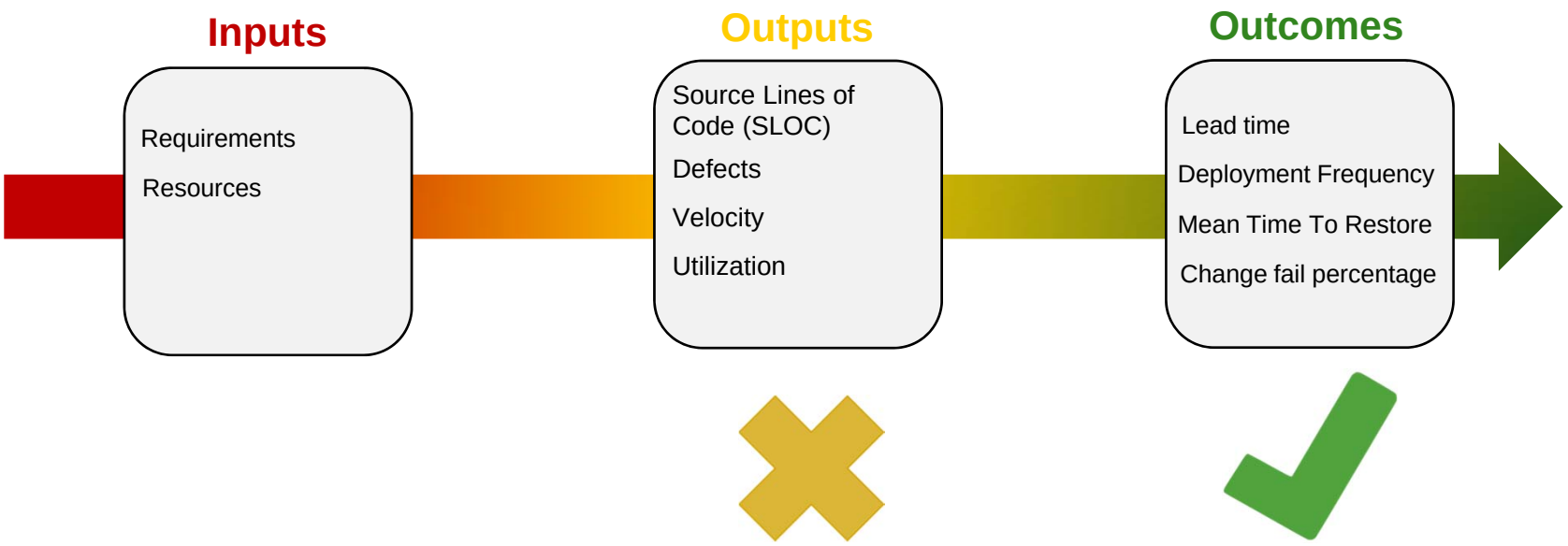
Why Measure

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

2.0 Measures

Biggest Problem with our measures

Measuring Output instead of Outcomes

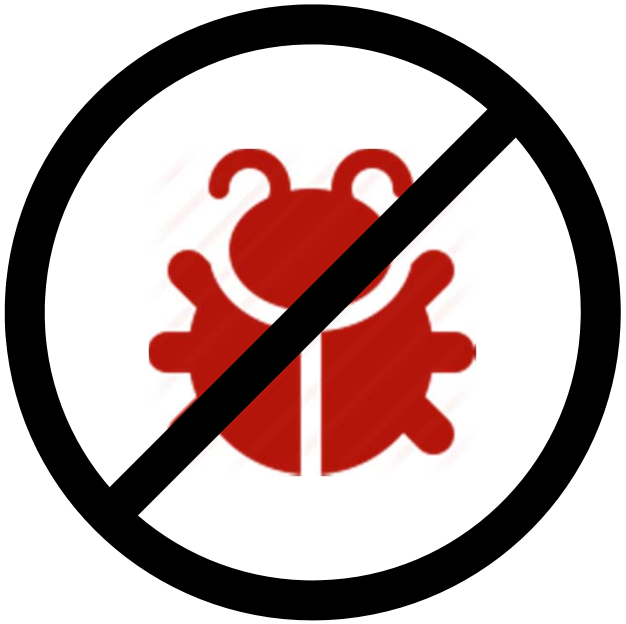


Source Lines of Code (Sloc)

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

Defects

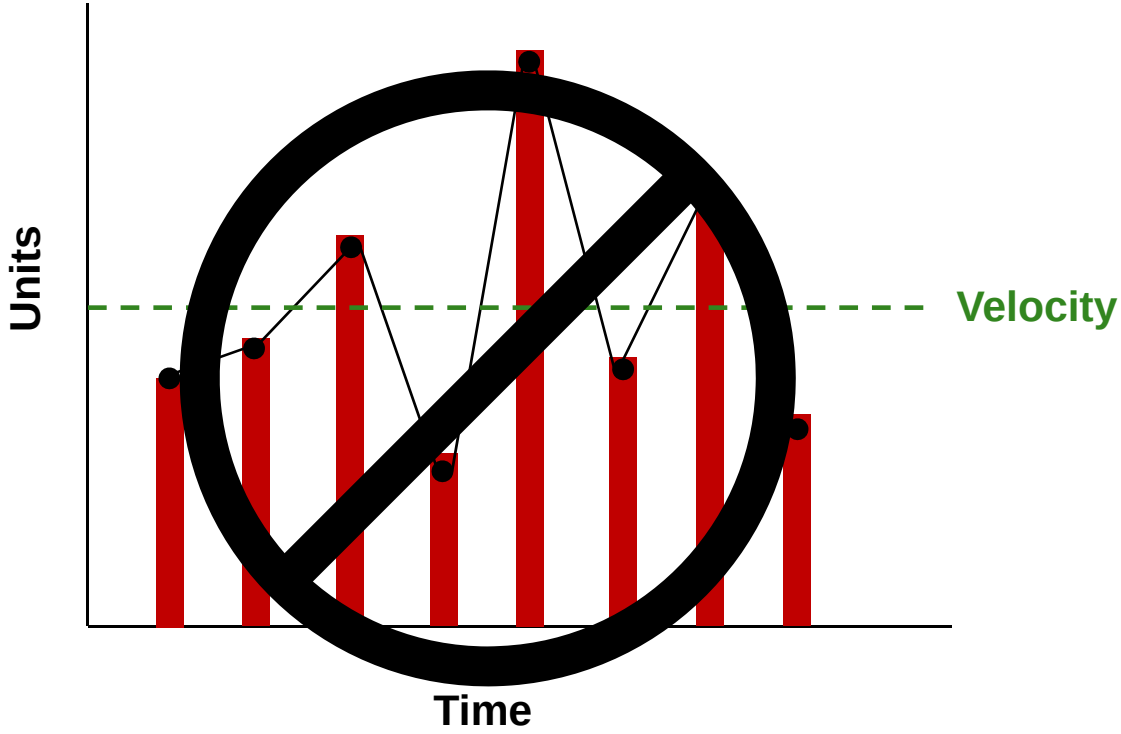
- Incentivizes team to find bugs as opposed minimizing defects in implementation in first place.
- Not all code is created equal
- Does not reflect severity



Velocity

- Team Dependent
- Teams game velocity

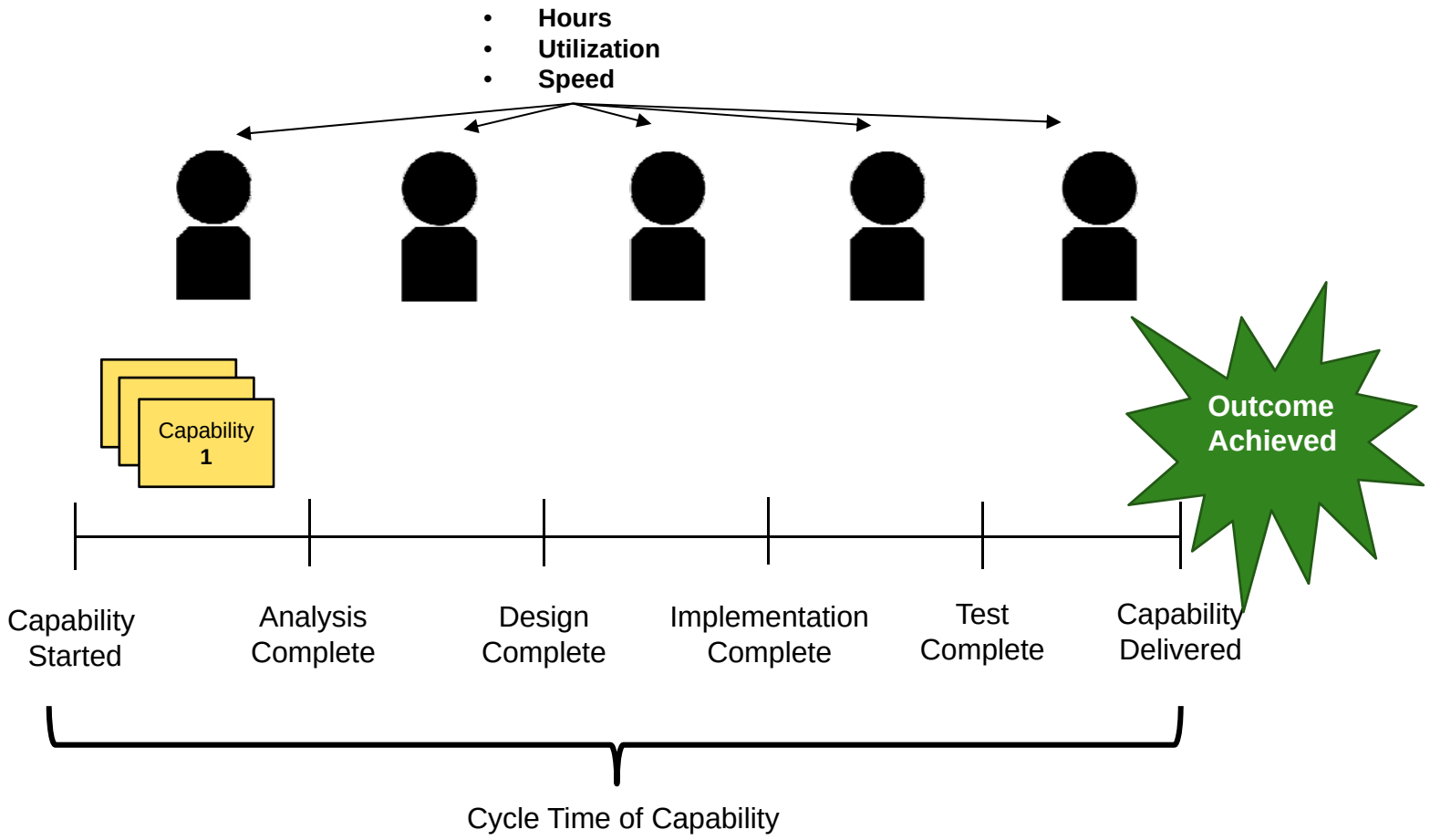
Velocity - Average number of Story points a team can complete Per time box.



Utilization

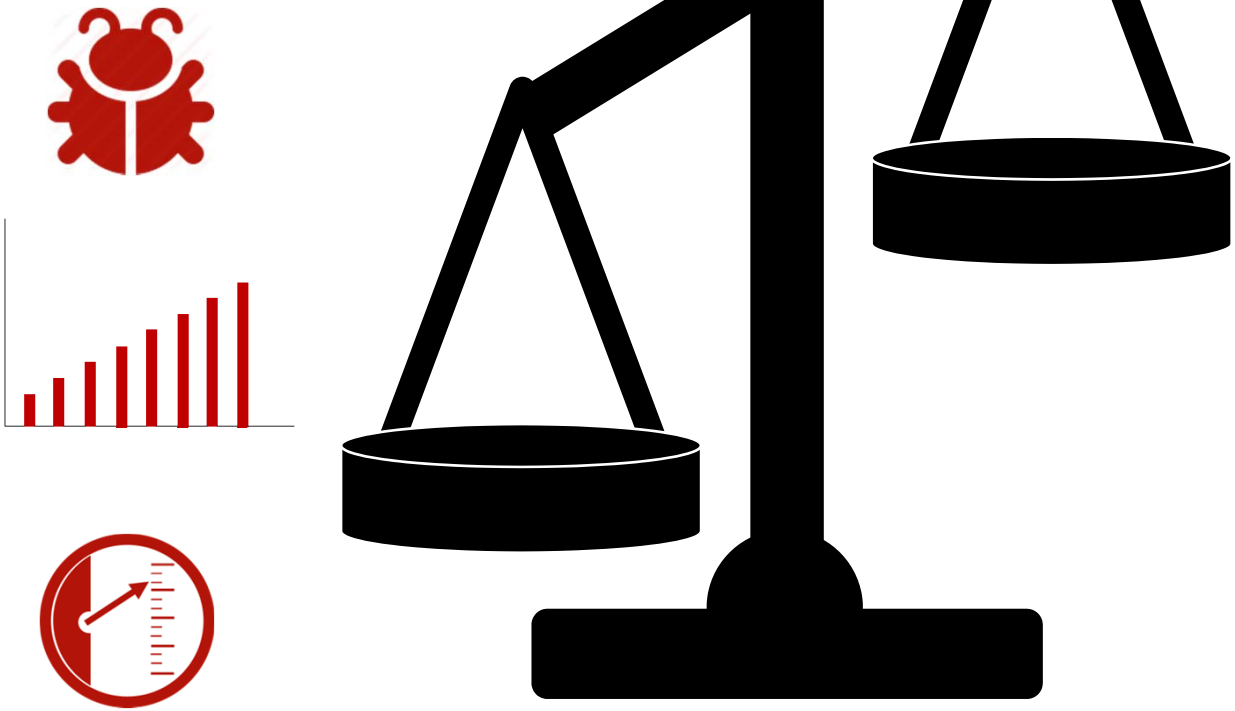
- Once utilization gets high there is not any spare capacity to handle unplanned work or changes.
- Reduction in quality levels
- Burnout

Measure Outcomes not people



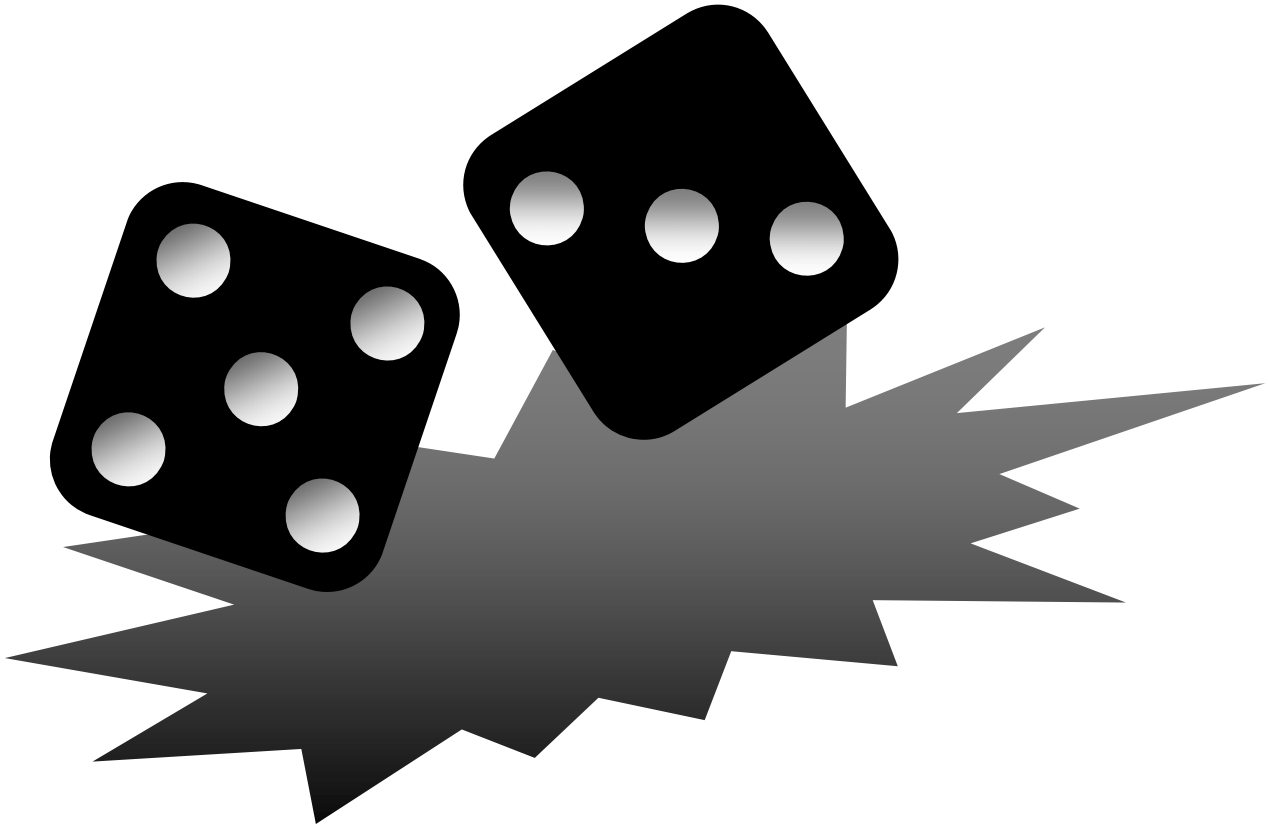
You will get what you measure

SLOC



Measures will be gamed

- Choose Carefully
- Pick metrics that only improve when gamed



What should I measure

Things the business cares about

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

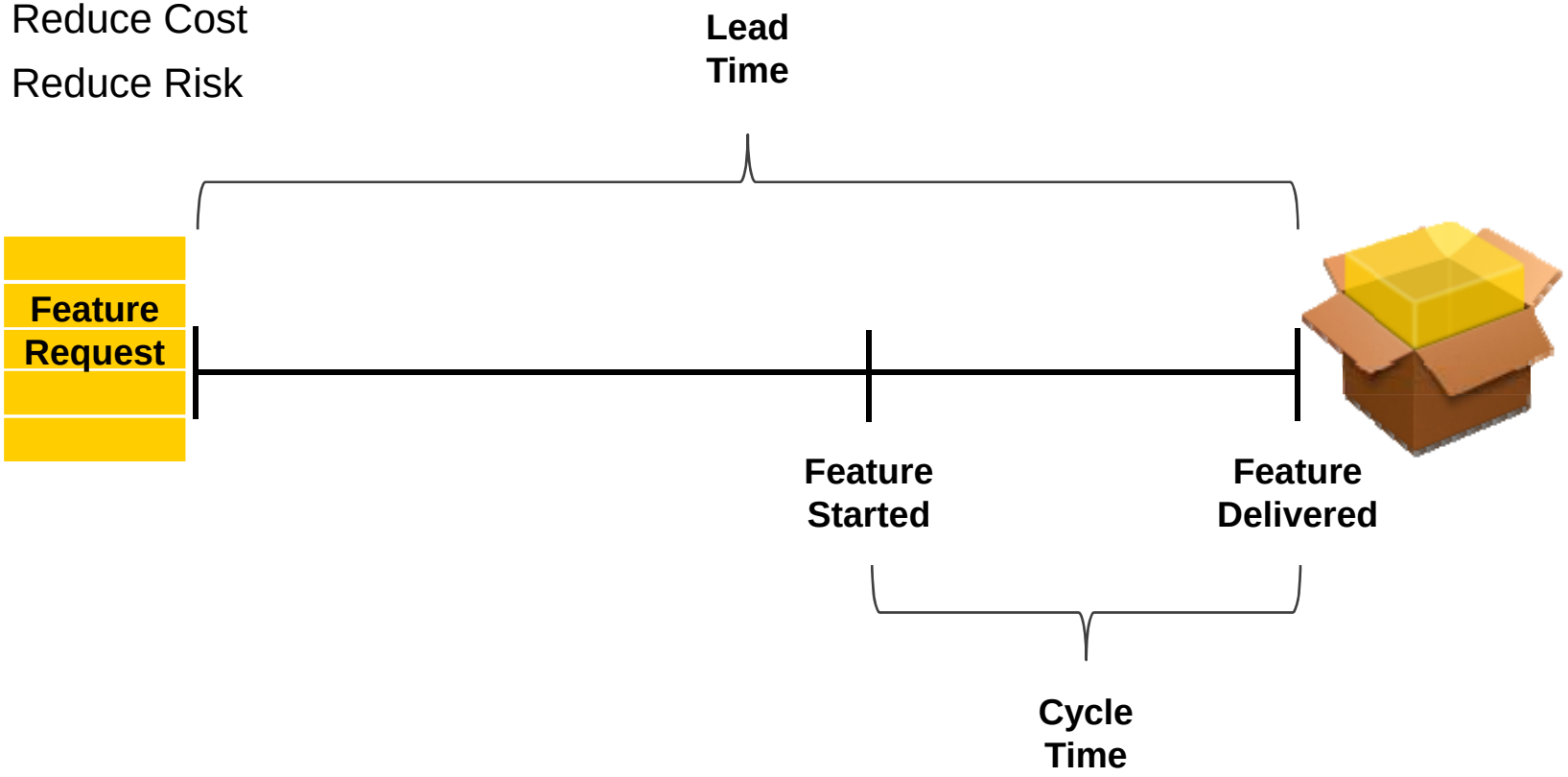
Increase deployment frequency

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

Lead Time

Shorter lead times:

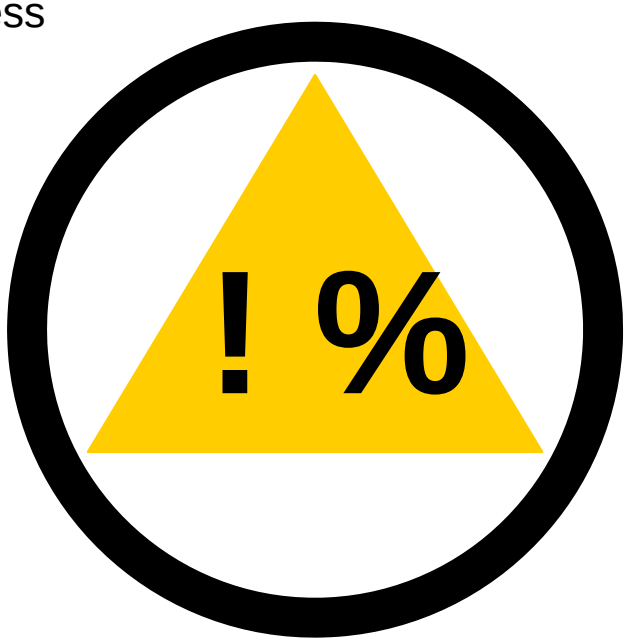
- Increase profit
- Increase Quality
- Reduce Cost
- Reduce Risk



Change Fail Percentage

Reducing the percentage of failures when making changes to the baseline

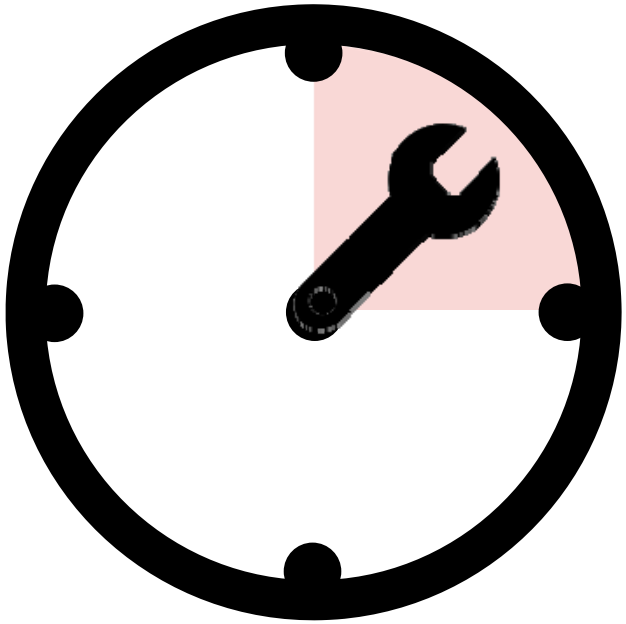
- Increase flexibility to make change
- Reduce risk of changes
- Increase Value to our customers
- Higher profit for the business



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

Results from high performing organizations

46x

More frequent deployments

5x

lower Change failure rate

96x

Faster recovery From failures

440x

Shorter lead times

Puppet and DORA (DevOps Research and Assessment)
2017 State of DevOps Report

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

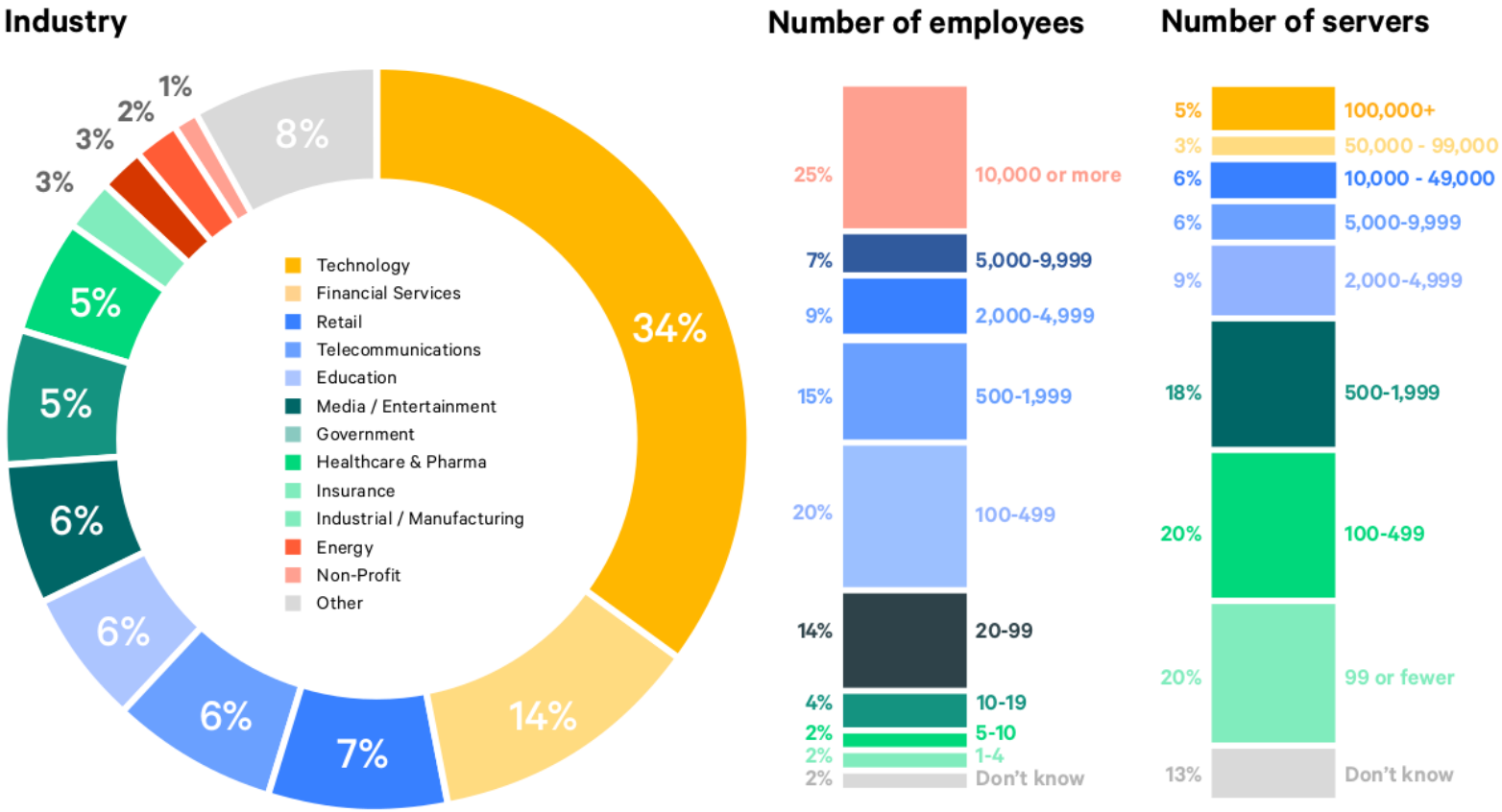
2x

Commercial	Non- Commercial
• Productivity • Profitability • Market Share • # of Customers	• Quantity of Products • Operating Efficiency • Customer Satisfaction • Quality of Products • Mission Goals

Puppet and DORA (DevOps Research and Assessment)
2017 State of DevOps Report

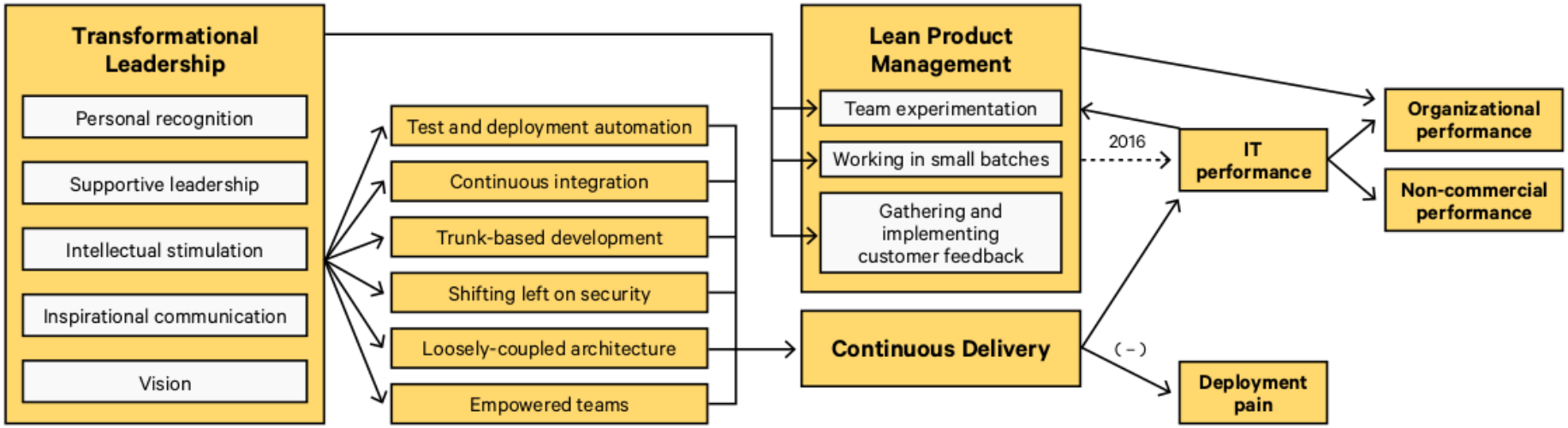
Who was measured

27,000 Responses



[Puppet and DORA (DevOps Research and Assessment) 2017 State of DevOps Report]

Performance Drivers to obtain these results



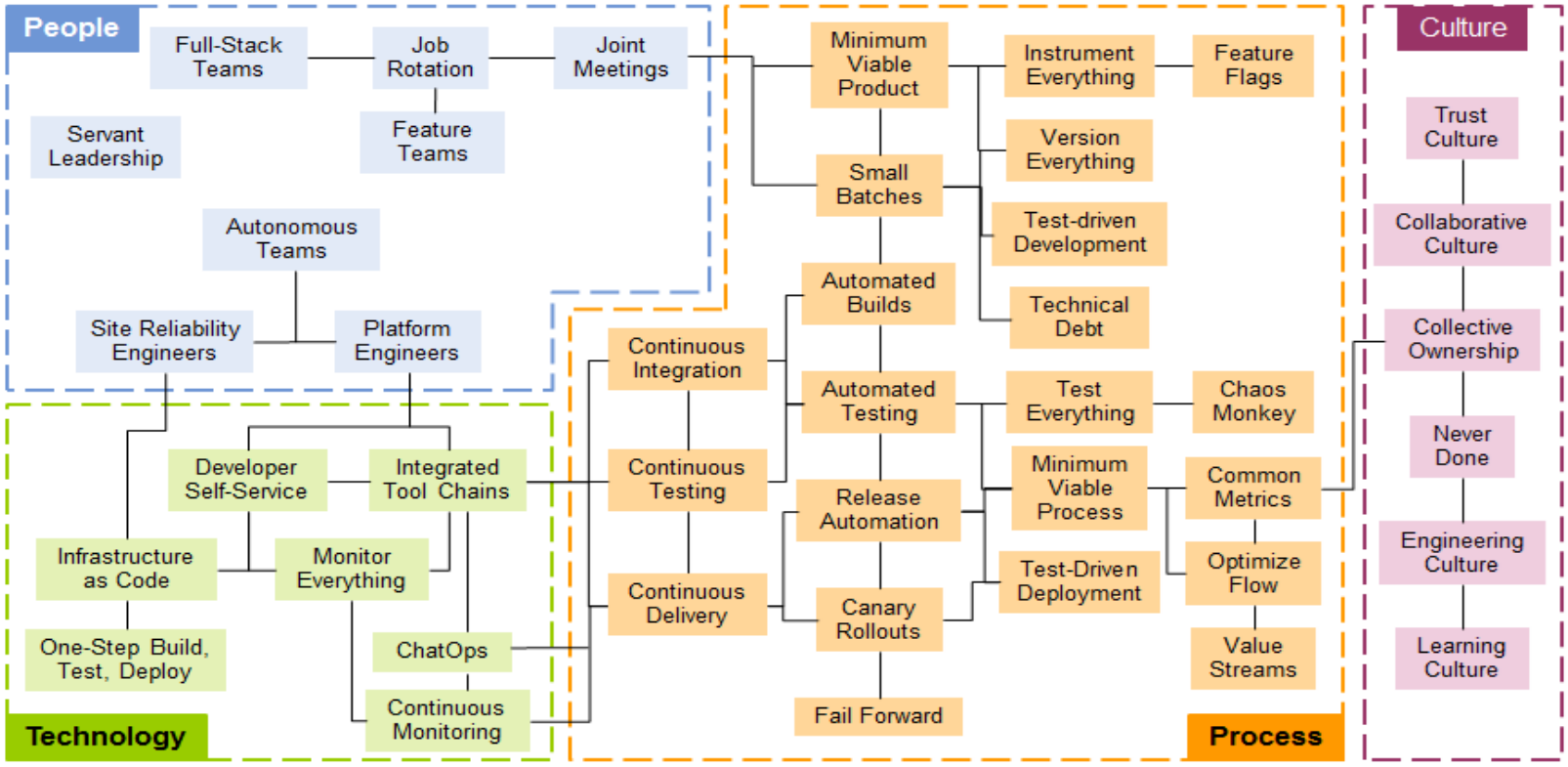
Puppet and DORA (DevOps Research and Assessment)
2017 State of DevOps Report

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



Gartner