



Culture is not Squushy

Peter Burkholder

DevOpsDC, February 2019

with tweaks for TTS DevOps Guild, May 2019

“Let’s measure our
Westrum typology!”

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CA(L)MS (2010)

- Culture
- Automation
- (Lean)
- Metrics
- Sharing

Puppet state of DevOps reports

- Key Players:
 - Gene Kim
 - Jez Humble
 - James Turnbull
 - John Willis
- 2012 Survey Data
- Presentation at *Velocity*, June 2013

High Performing DevOps Teams(2012)

- They're more agile
 - 30x more frequent deployments
 - 8,000x shorter lead time (minutes/hours vs. months/quarters)
- They're more reliable
 - 2x the change success rate
 - 12x faster MTTR

Measuring Culture (2012)

“I’ll tell you EXACTLY what devops means. Devops means giving a shit about your job enough to not pass the buck. Devops means giving a shit about your job enough to want to learn all the parts and not just your little world. Developers need to understand infrastructure. Operations people need to understand code. People need to fucking work with each other and not just occupy space next to each other.”

– John Vincent | @lusis | <http://bit.ly/12DkRhF>

Measuring Culture (2012)

- Trust (and Verify)
- Continuous Improvement vs Risk Management Theater
- “Human Error”
- Heroes / "high performers"

How is your organizational culture?

Nicole Forsgren



On my team...

- information is actively sought.
- messengers are not punished when they deliver news failure or other bad news.
- responsibilities are shared.
- cross-functional collaboration is encouraged and rewarded.
- failure causes enquiry.
- new ideas are welcomed.
- failures are treated primarily as opportunities to improve.

Rank from 1 (strongly disagree) to 7 (strongly agree)

A typology of organisational cultures

R Westrum

Qual Saf Health Care 2004;13(Suppl II):ii22–ii27. doi: 10.1136/qshc.2003.009522

There is wide belief that organisational culture shapes many aspects of performance, including safety. Yet proof of this relationship in a medical context is hard to find. In contrast to human factors, whose contributions are many and notable, culture's impact remains a commonsense, rather than a scientific, concept. The objectives of this paper are to show that organisational culture bears a predictive relationship with safety and that particular kinds of organisational culture improve safety, and to develop a typology predictive of safety performance. Because information flow is both influential and also indicative of other aspects of culture, it can be used to predict how organisations or parts of them will behave when signs of trouble arise. From case studies and some systematic research it appears that information culture is indeed associated with error reporting and with performance, including safety. Yet this relationship between culture and safety requires more exploration before the connection can be considered definitive.

We might see culture for an organisation as analogous to personality in the individual. The differences in response patterns can be striking. For instance, political scientist Robert Putnam systematically compared the patterns of action of the newly formed regional governments of Italy. Each of these governments reflected the dominant culture of its region. Each of them had systematically different reactions even to simple matters such as responding to a letter from constituents.

“...We were gratified to discover...a surprisingly high consistency among our twelve diverse indicators of institutional performance. Regions that have stable cabinets, adopt their budgets on time, spend their appropriations as planned, and pioneer new legislation are, for the most part, the same regions that provide day care centers and family clinics, develop comprehensive urban planning, make loans to farmers, and answer their mail promptly.”¹

Putnam found that culture involves the pattern of thought, emotion, and action. All of



Matthias Marschall @mmarschall · 27 Jun 2013

"What you call 'root cause' is simply the place you stop looking any further" -
Sidney Dekker, Prof. Human Factors & Flight Safety **#devops**



2



19



12



Organizational Culture

er# vs.

Safety Culture

A sampling of safety culture measures:

- *Competing Values Framework*: 65 questions, 1-5 ranking
- White & Wilson: 113 questions on a 7-point scale
- Team Climate Inventory: 44 items across 15 subscales
- Ostroff Organizational Climate Survey: 94 Items
- Zohar 2005: Only 16 questions, but:
 - “Considers safety when setting production schedule”
 - “Quickly corrects any safety hazard”
- **Gallup Q12 (paid only)**
- Dimensions of Learning questionnaire

Ron Westrum, Eastern Michigan University

Pathological organisations are characterized by large amounts of fear and threat.

Bureaucratic organisations protect departments.

Generative organisations focus on the mission.

Pathological

Power-oriented

Low co-operation

Messengers "shot"

Responsibilities shirked

Bridging discouraged

Failure leads to
scapegoating

Novelty crushed

Hierarchical

Rule-oriented

Modest co-operation

Messengers neglected

Narrow responsibilities

Bridging tolerated

Failure leads to justice

Novelty leads to problems

Generative

Performance-oriented

High co-operation

Messengers trained

Risks are shared

Bridging encouraged

Failure leads to inquiry

Novelty implemented

Information Flow

- *Suppression*: Harming or stopping the person bringing anomaly to light
- *Encapsulation*: Isolating the messenger, so the message is not heard
- *Public relations*: Putting the message "in context" to minimize impact
- *Local fix*: Responding to present case, but ignoring possibility of others
- *Global fix*: An attempt to respond to the problem wherever it exists
- *Inquiry*: Attempting to get at the "root causes" of the problem

Case studies and anecdotes

ATR-72

- "There were five pre-Roselawn ATR-42 incidents that occurred in severe icing conditions"
 - But no global alert issued, due to heavy pressure from French aviation
- October 31, 1994, American Eagle #4184 killed all 68 aboard

What examples can you think of?

- GM ignition switch flaw: 124 deaths
- Toyota sudden accelerations: 89 deaths
- Boeing 737-Max: 346 deaths
- Equifax and struts patch: blame 1 person

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— Werner von Braun

The true need is for a scheme
that captures one or few
dimensions in an easy to
understand way

— - Ron Westrum

Likert scales

- Do you feel you can provide feedback to management and it will be genuinely taken into consideration?

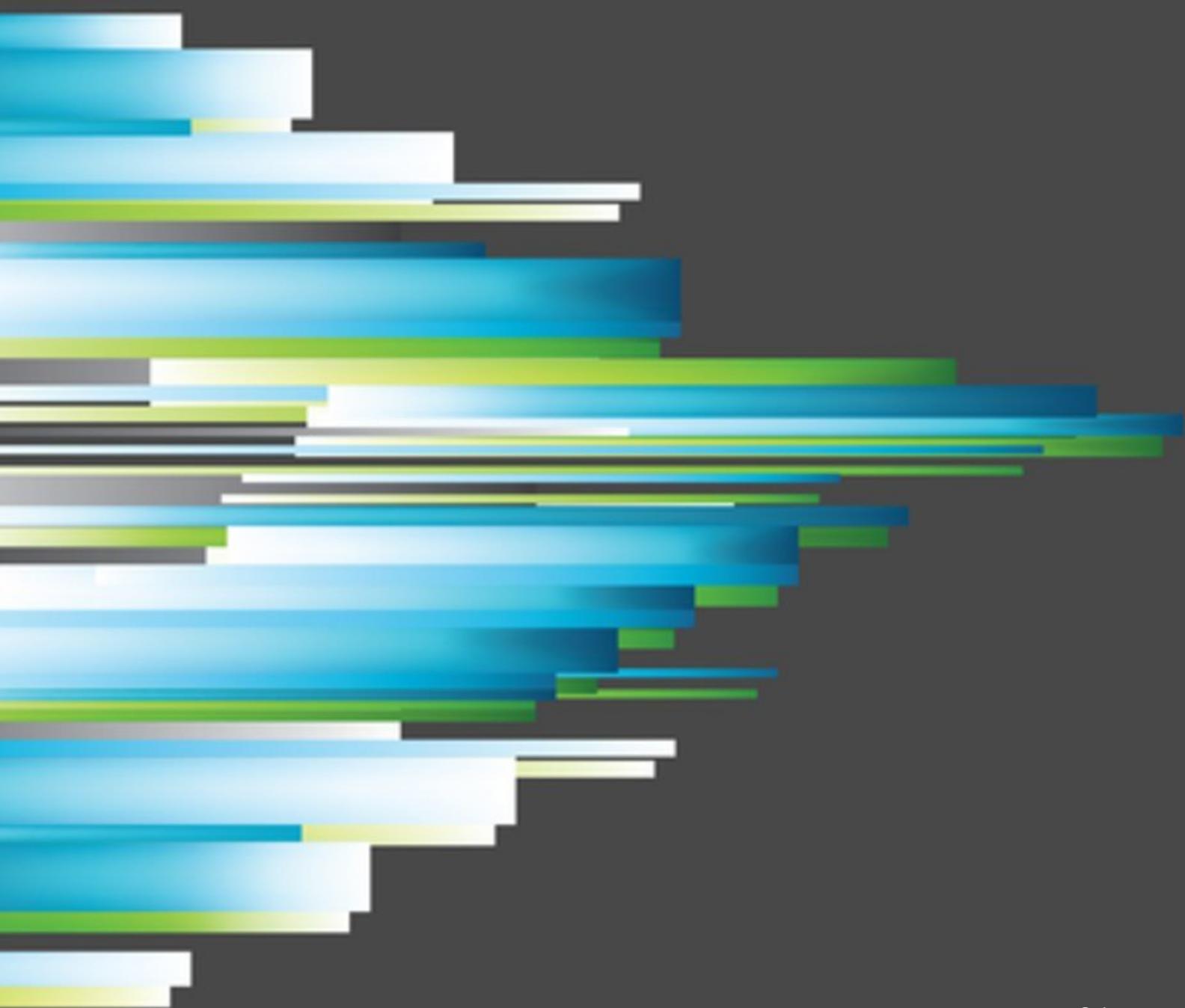
Vs:

- I can provide feedback to management.
- My feedback will be genuinely taken into consideration.
- 1 <-- Strongly disagree 4 Strongly agree --> 7

Results

ACCELERATE

Building and Scaling High Performing
Technology Organizations

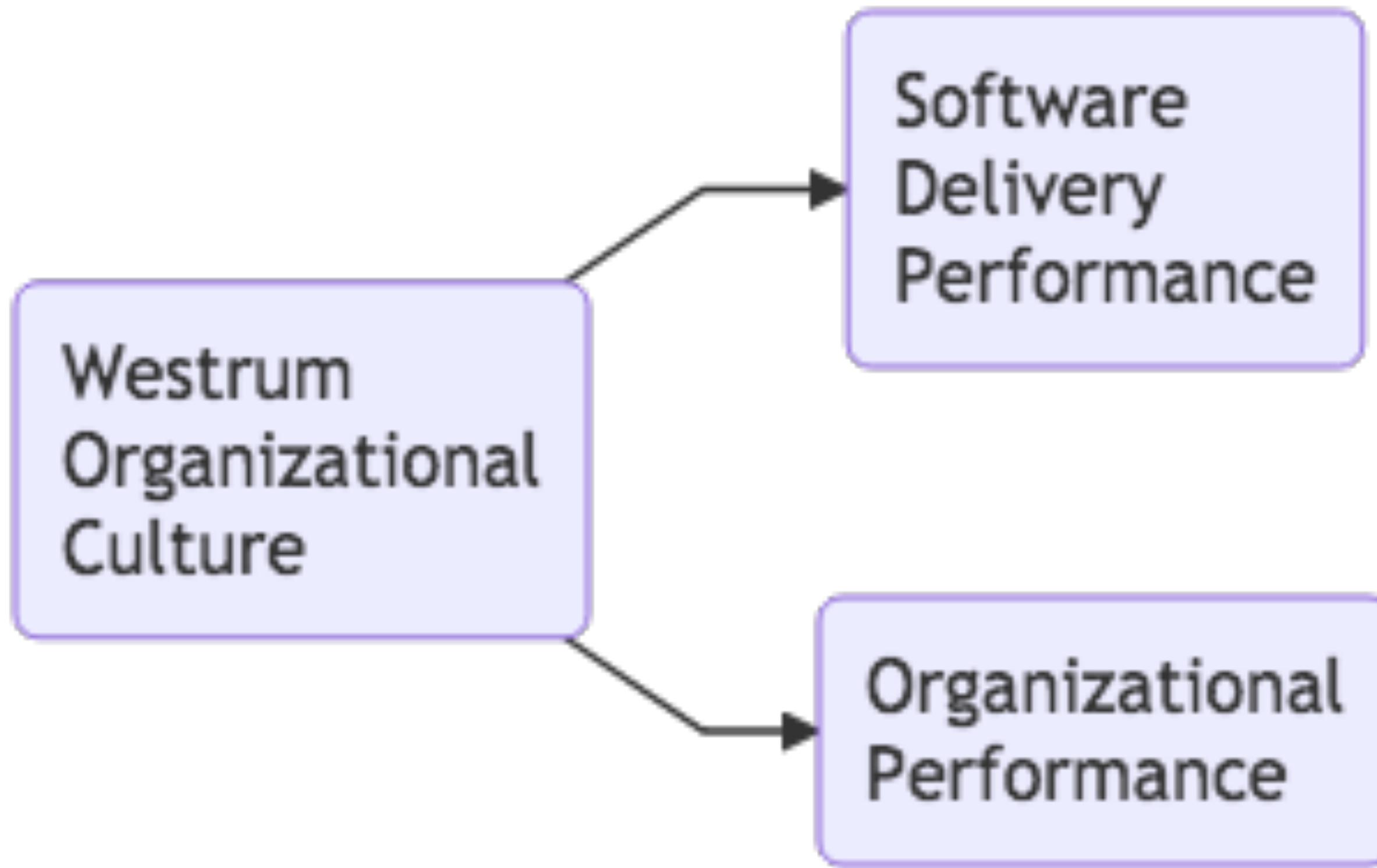


**Continuous
Delivery**



**Westrum
Organizational
Culture**

**Lean
Management**



Westrum organizational culture is highly correlated with *eNPS* and that elite performers are 1.8 times more likely to recommend their team as a great place to work.

In 2016, 31% of respondents were classified as pathological, 48% bureaucratic, and 21% generative.

- Excerpt From: Nicole Forsgren, PhD, Jez Humble and Gene Kim.
“Accelerate.” iBooks.

Let's measure this! What could possibly go wrong?

- Scope to a team or unit
- Ask the seven questions, scoped to unit
- Analyse

Questions to ask going into this

- What if there's bimodal/skew distribution?
- What if there's variance (lack of *convergence*) across questions?
- What to do for *pathological* results?

Longitudinal considerations

- There's *very* little written on this
- What about leading and lagging indicators?
- How will you separate climate from culture?

How we did this in 18F engineering

- Amy Mok
- Alex Soble
- Peter Burkholder

Selected questions from:

- DevOps Westrum Culture Survey
- Steven Huang, Culture Amp: *5 Diversity and Inclusions Questions*
- Amy Edmondson, reWork at Google: *Questions to measure psychological safety*
- Past culture surveys from 2017 and 2018
- And our newly invented demographic measure:
 - "I identify as a member of an under-represented demographic in technology."

- I feel like I belong at [company]
- I can voice a contrary opinion without fear of negative consequences
- Perspectives like mine are included in decision making
- My company believes that people can greatly improve their talents and abilities
- Administrative tasks that don't have a specific owner are fairly divided

Share



@pburkholder



1. If you make a mistake on this team, it is often held against you.
2. Members of this team are able to bring up problems and tough issues.
3. People on this team sometimes reject others for being different.
4. It is safe to take a risk on this team.
5. It is difficult to ask other members of this team for help.
6. No one on this team would deliberately act in a way that undermines my efforts.
7. Working with members of this team, my unique skills and talents are valued and utilized.

Results

Recommendations (from Humble, et al)

- Run semi-annually or annually
- Make aggregated results available to all
- Ensure execs meet to discuss findings, next steps

Pitfalls

- Comparing teams against each other
- Basis of pay or promotion
- “Your team doesn’t appreciate our culture”
- Cinderellas
 - > "Does the isolated generative unit become a Cinderella, the target of hostile jibes and political actions?"

Your stories & questions

Summary

- DevOps and the CALMS model
- No common criteria for culture, but DORA uses Westrum
- Information flow categorizes you as
 - Pathological | Bureaucratic | Generative
- 7 criteria
- Lean & CD → Generative → SDO & Org outcomes
 - $p < 0.05$ confidence
- Use at your own risk

“Let’s (not) measure our Westrum typology?”

The paradox of leadership

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