DORA
DEVOPS RESEARCH & ASSESSMENT

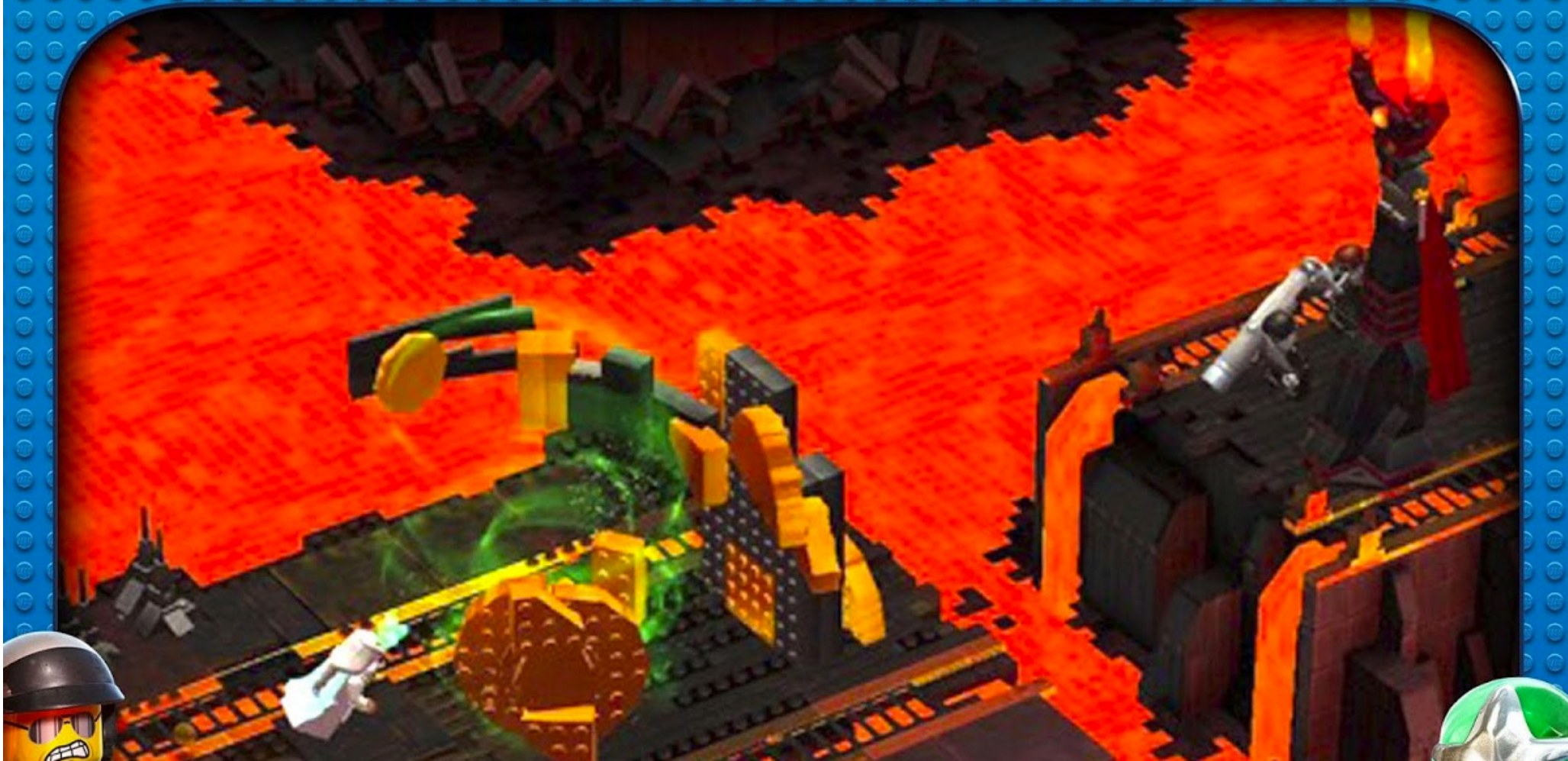# Be Awesome with DevOps (Through Data!)

Nicole Forsgren, PhD

CEO and Chief Scientist

DevOps Research and Assessment (DORA)
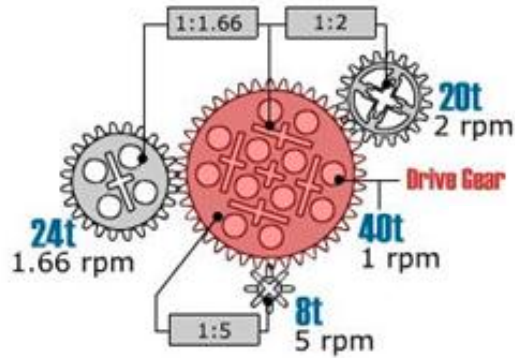
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Doing DevOps and IT Right

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IT Performance drives Organizational Performance

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2x
More likely to exceed Profitability, Market share, and Productivity goals
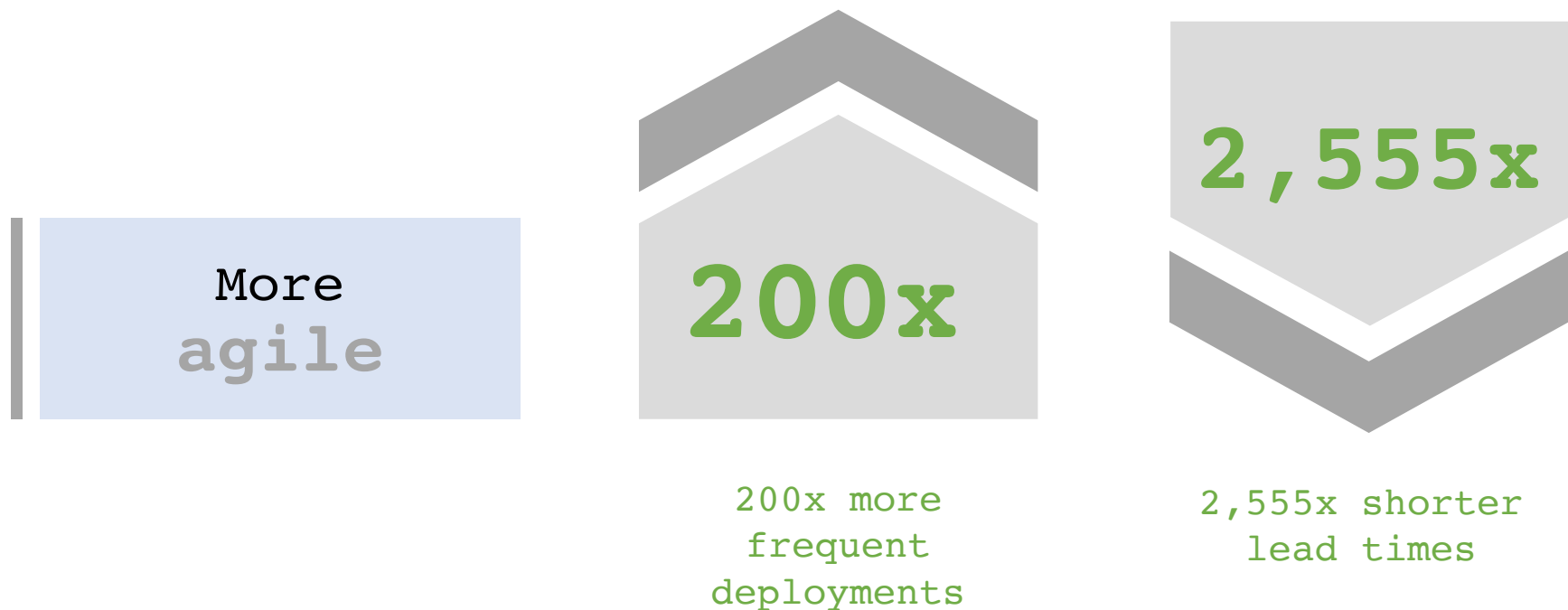
50%
Higher market cap growth over 3 years*

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Doing IT Right
BOTH Speed AND Stability

- Deploy frequency (when business demands)
- Lead Time for Changes
- Mean Time to Recover (MTTR)
- Change Fail Rate

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High Performing DevOps teams

More
agile

200x

200x more
frequent
deployments

2,555x

2,555x shorter
lead times

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High Performing DevOps teams

More
reliable

24x

24x faster
recovery from
failures

3x

3x lower
change fail rate
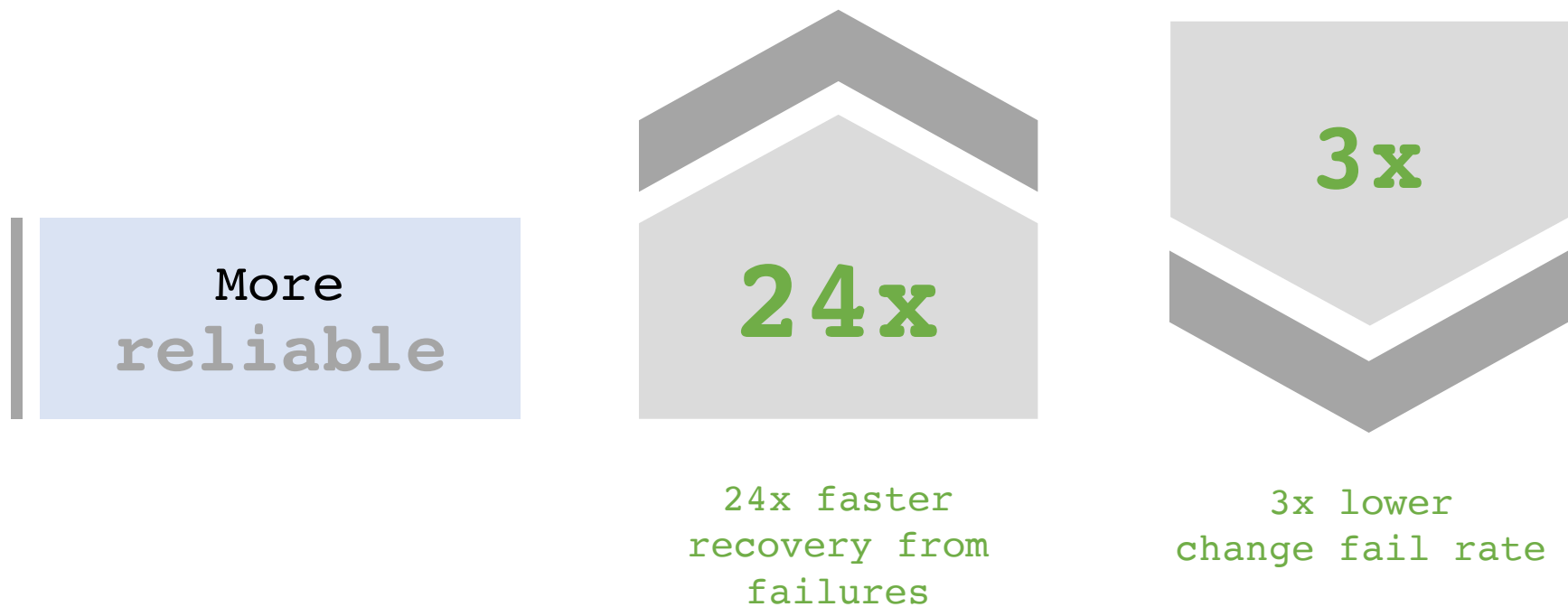
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How can we achieve awesome in our own organizations?

Measurement

Bruce gain
Estimated heights and weights of on-screen Batmen

Height (cm)
Weight (kg)

Comic book	**Adam West**	**Michael Keaton**	**Val Kilmer**	**George Clooney**	**Christian Bale**	**Lego Batman***	**Ben Affleck**
1939-	1966-68	1989-92	1995	1997	2005-12	2014	2016-
188cm/95kg	188cm/91kg	178cm/72kg	183cm/93kg	180cm/78kg	183cm/82kg	4cm/4g	193cm/98kg

190
180
170
160
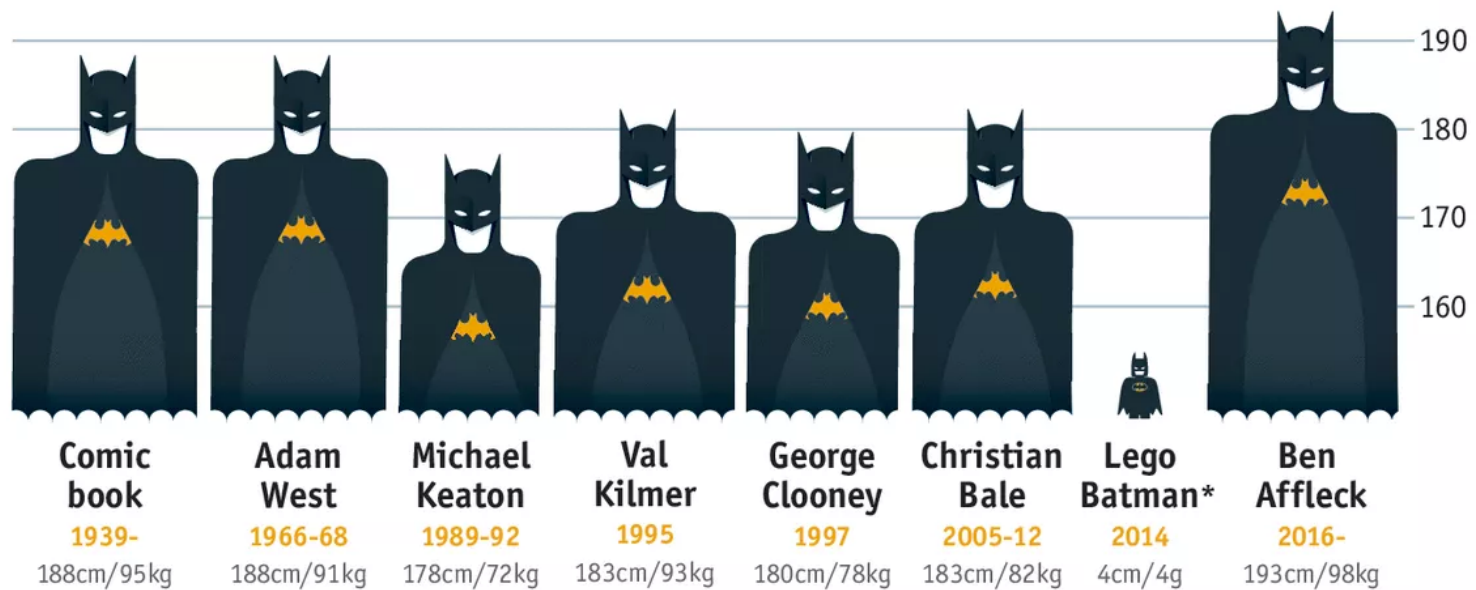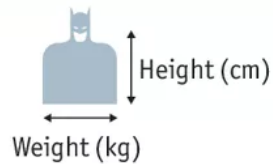
Sources: Moviepilot; IMDb

*From "The Lego Movie", not to scale

Economist.com

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Measure things that matter

PROTIP: Include both outcomes and drivers

Inputs

- Stats land: the independent variable
- The measures that we hypothesize will drive changes in the outcome variables

Outcomes

- Stats land: the dependent variable
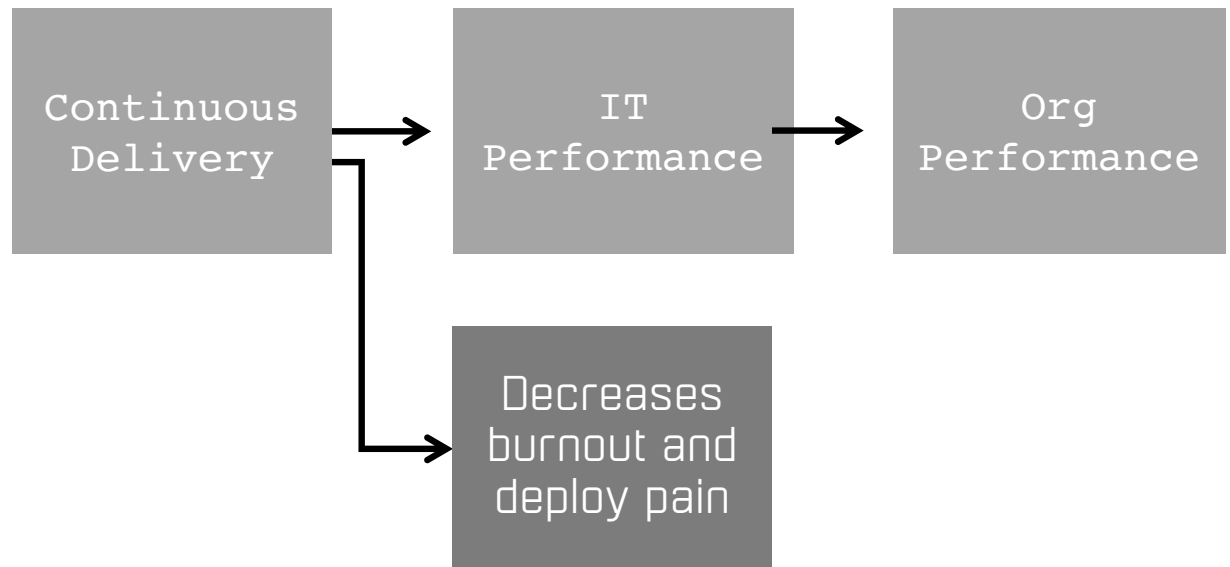- The measures that are affected by work and actions in other areas

Inputs ➡️ Outcomes

- Stats land: the independent variable

- The measures that we hypothesize will drive changes in the outcome variables

- Stats land: the dependent variable

- The measures that are affected by work and actions in other areas
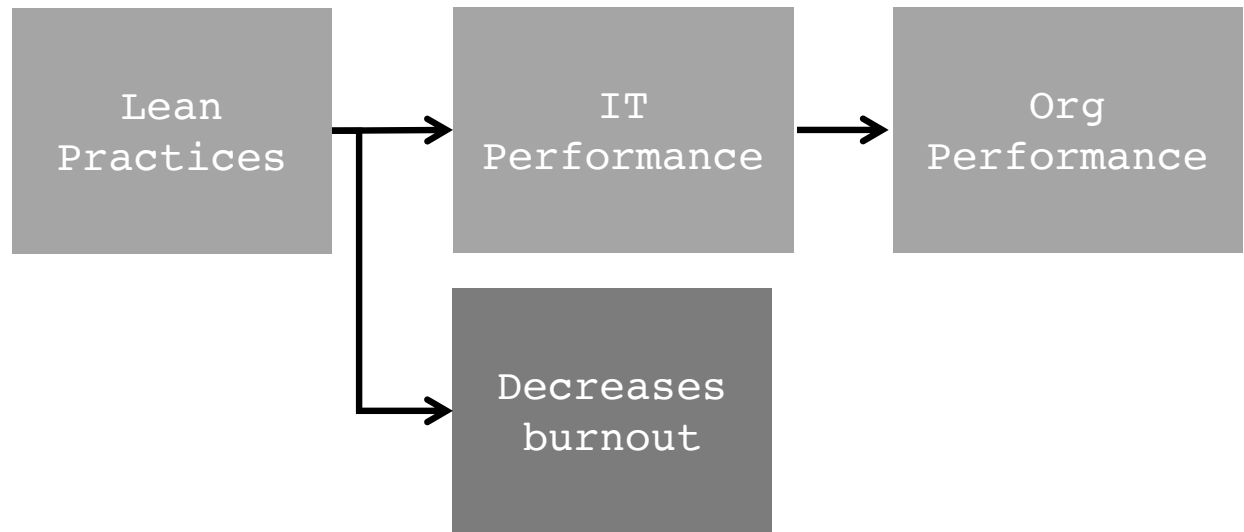
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- Effective test data management

- Test & Deployment automation

- Trunk-based development

- Continuous integration

- Version control

- Shifting left on security

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┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│  Continuous  │────▶│      IT      │────▶│     Org      │
│   Delivery   │     │ Performance  │     │ Performance  │
└──────┬───────┘     └──────────────┘     └──────────────┘
       │
       │             ┌──────────────┐
       └────────────▶│  Decreases   │
                     │ burnout and  │
                     │ deploy pain  │
                     └──────────────┘
```
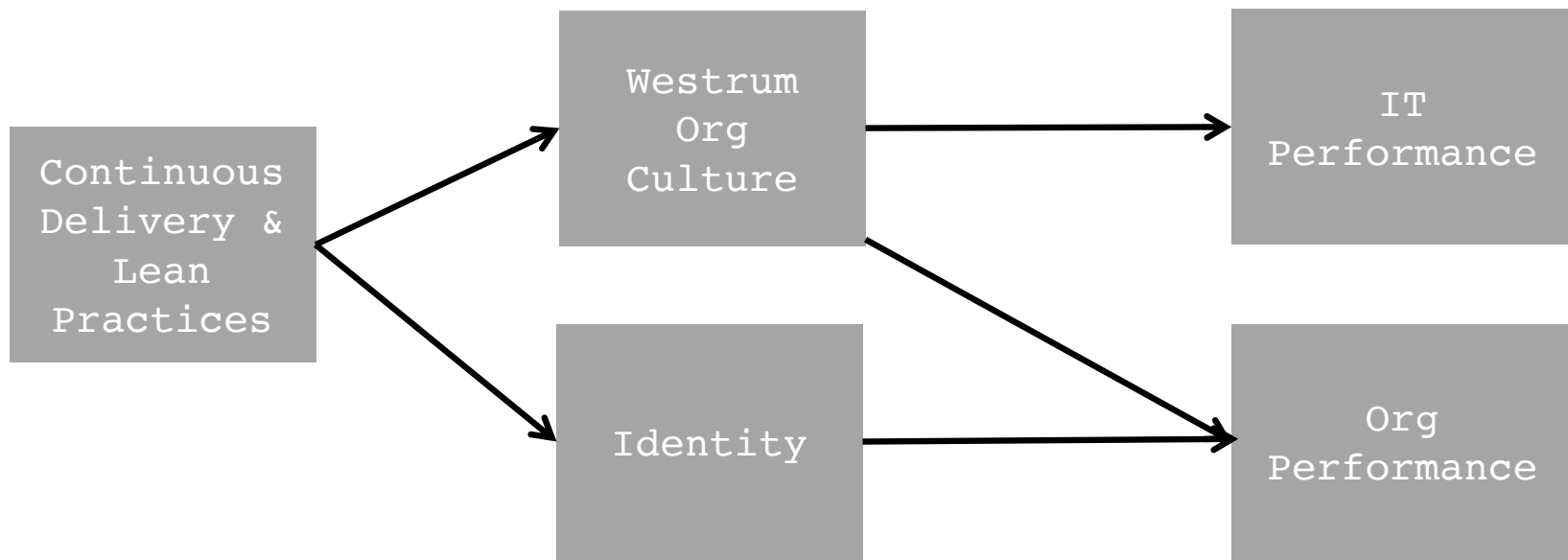
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- Effective WIP limits
- Visual displays
- Monitoring tools
- Gathering, monitoring, implementing customer feedback
- Small batches and making work visible

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┌──────────────┐         ┌──────────────┐      ┌──────────────┐
│     Lean     │────┬───▶│      IT      │─────▶│     Org      │
│  Practices   │    │    │ Performance  │      │ Performance  │
└──────────────┘    │    └──────────────┘      └──────────────┘
                    │    ┌──────────────┐
                    └───▶│  Decreases   │
                         │   burnout    │
                         └──────────────┘
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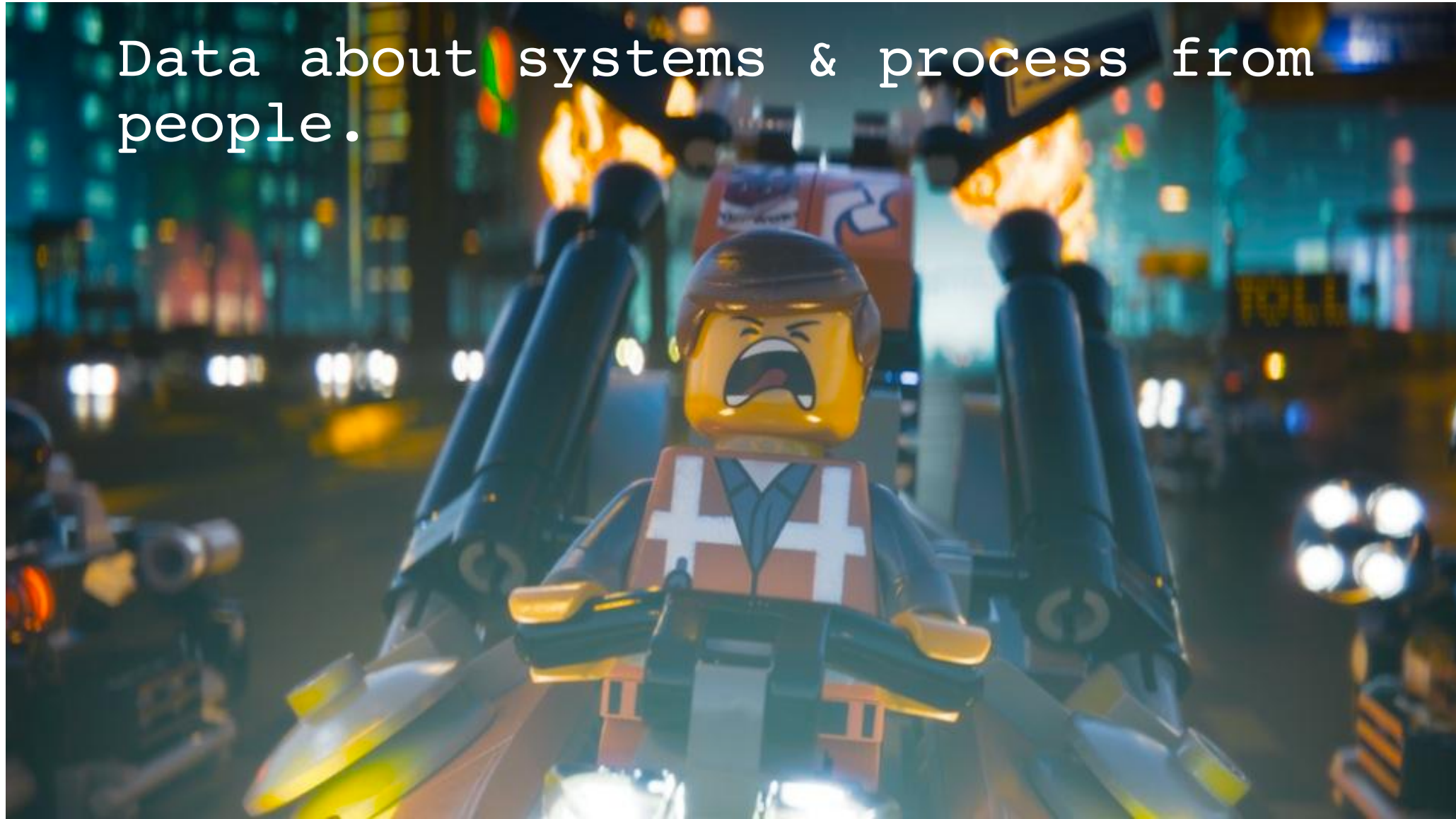
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How should we measure these?

- Data about systems & process **from systems**

- Data about systems & process **from people**

- Data about culture & people **from people**

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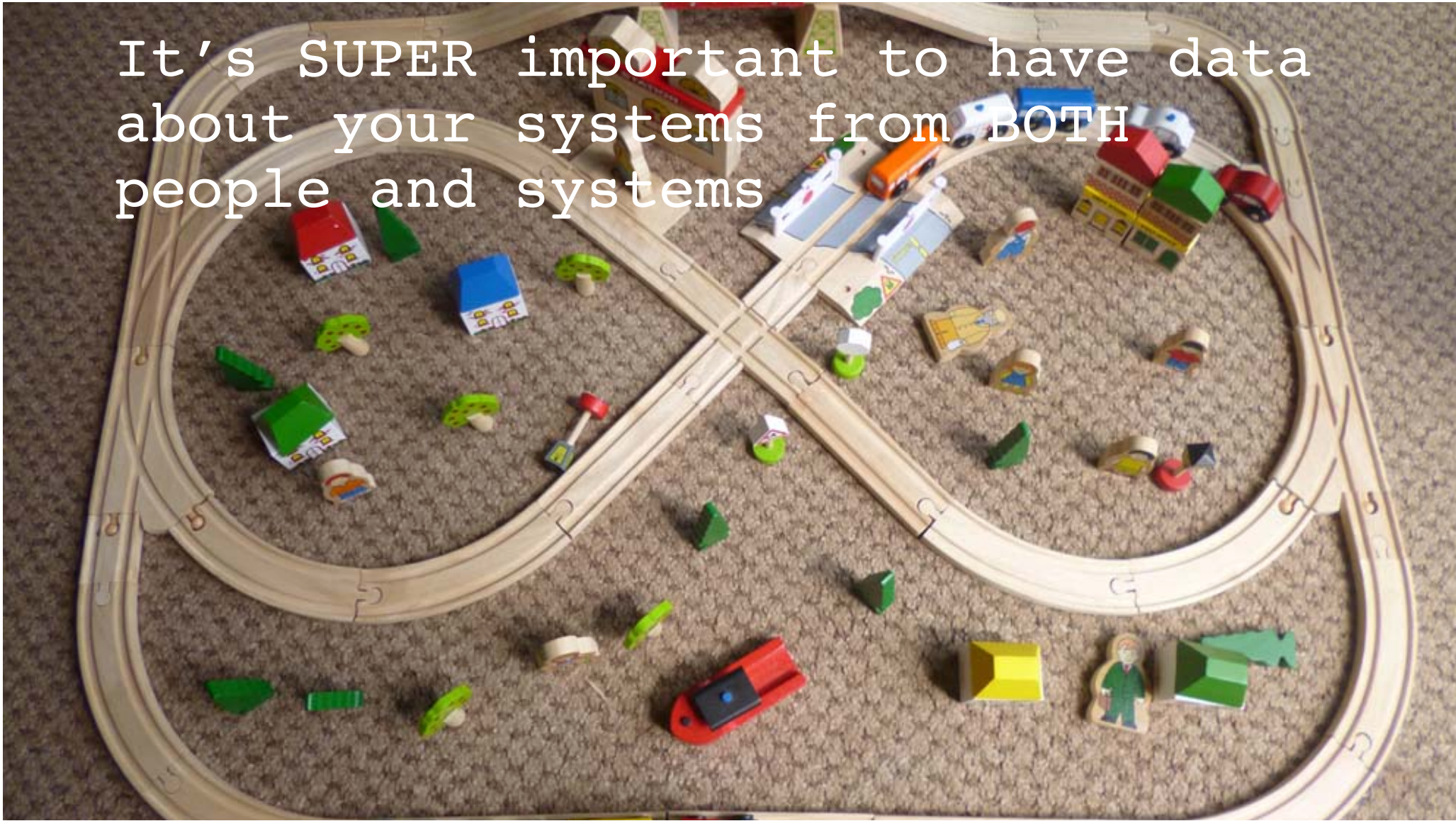Data about systems & process from systems

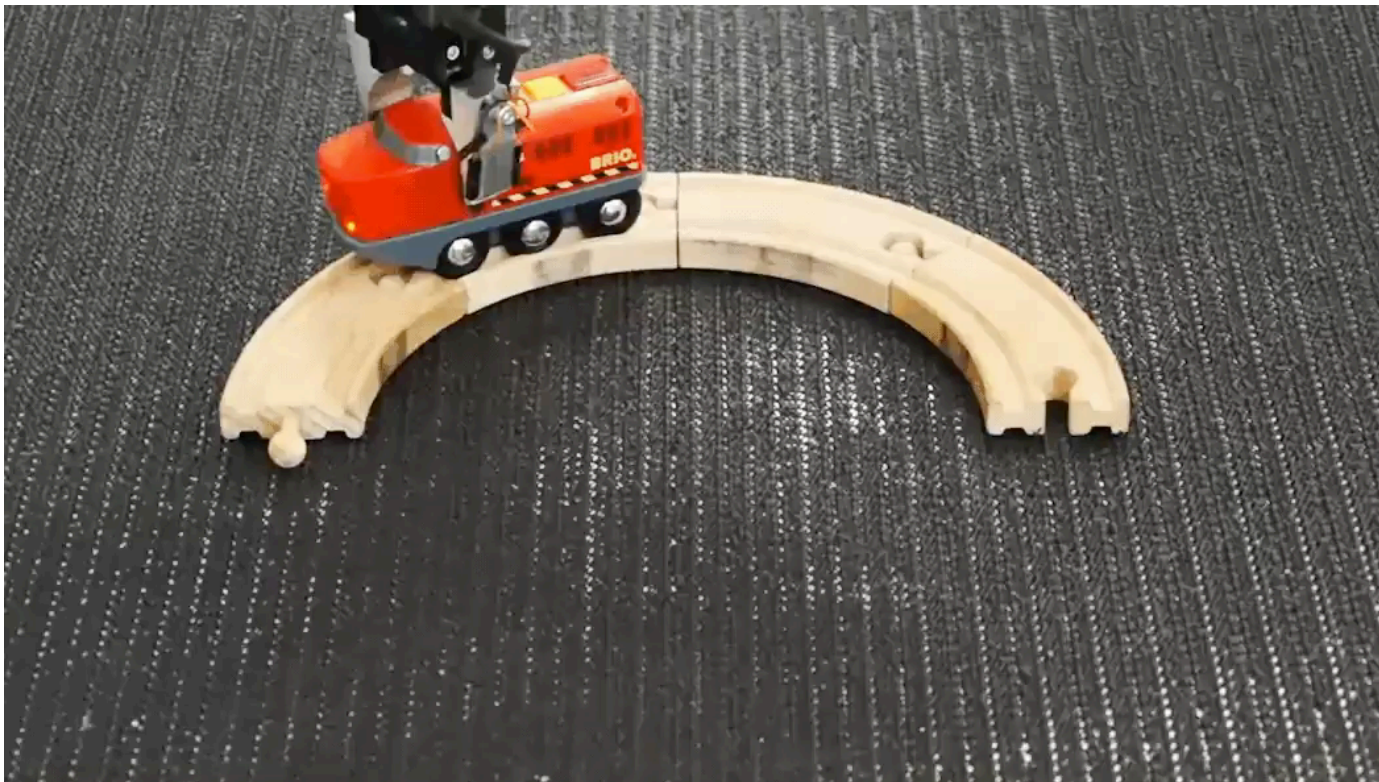Data about systems & process from people.

It's SUPER important to have data about your systems from BOTH people and systems
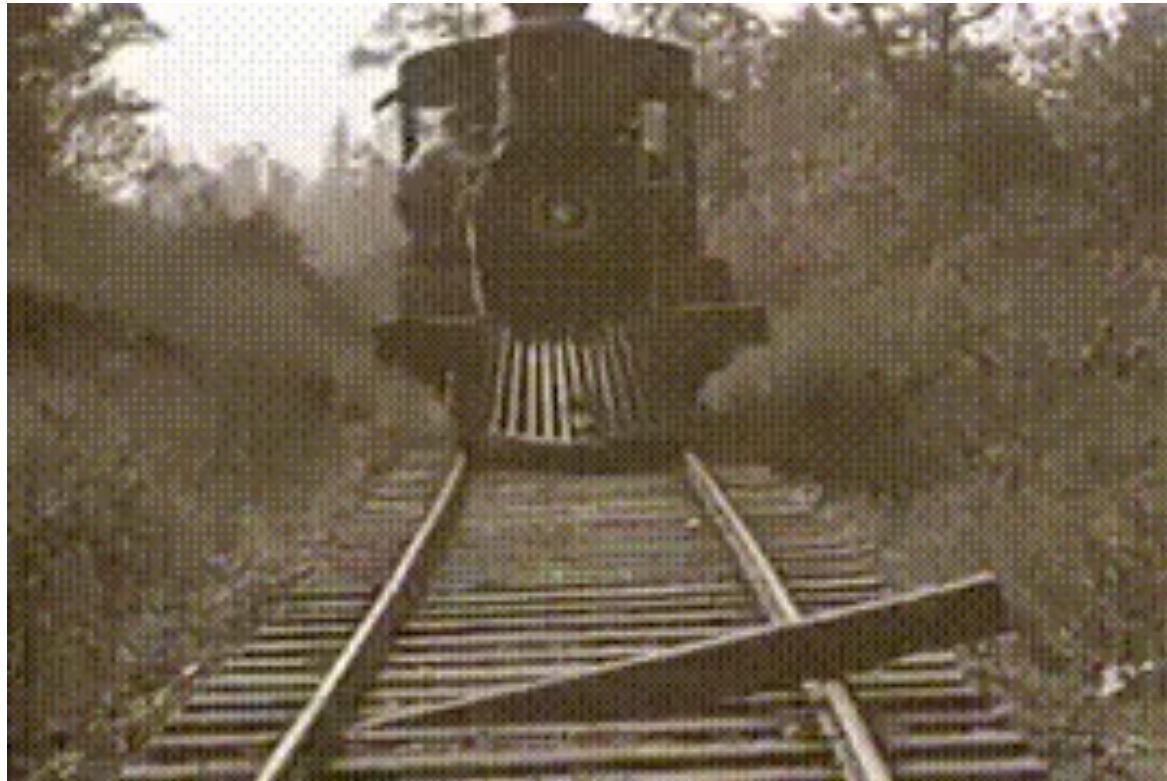
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- Incompleteness of instrumentation
- Extent of use
- Timing
- Triangulation

Data about people from people

Westrum Organizational Culture

Pathological Power-oriented	Bureaucratic Rule-oriented	Generative Performance-oriented
Low cooperation	Modest cooperation	High cooperation
Messengers shot	Messengers neglected	Messengers trained
Responsibilities shirked	Narrow responsibilities	Risks are shared
Bridging discouraged	Bridging tolerated	Bridging encouraged
Failure leads to scapegoating	Failure leads to justice	Failure leads to inquiry
Novelty crushed	Novelty leads to problems	Novelty implemented

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Remember to keep it up!

- Baseline
  - Be honest
  - A real baseline is a powerful tool
- Benchmark
  - Compare to larger groups: LOB, organization
  - DON'T compare to other teams
- Reassess
  - See the value of your work and investments

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BUSINESS BUSINESS NUMBERS
IS IT WORKING?

DEEZ
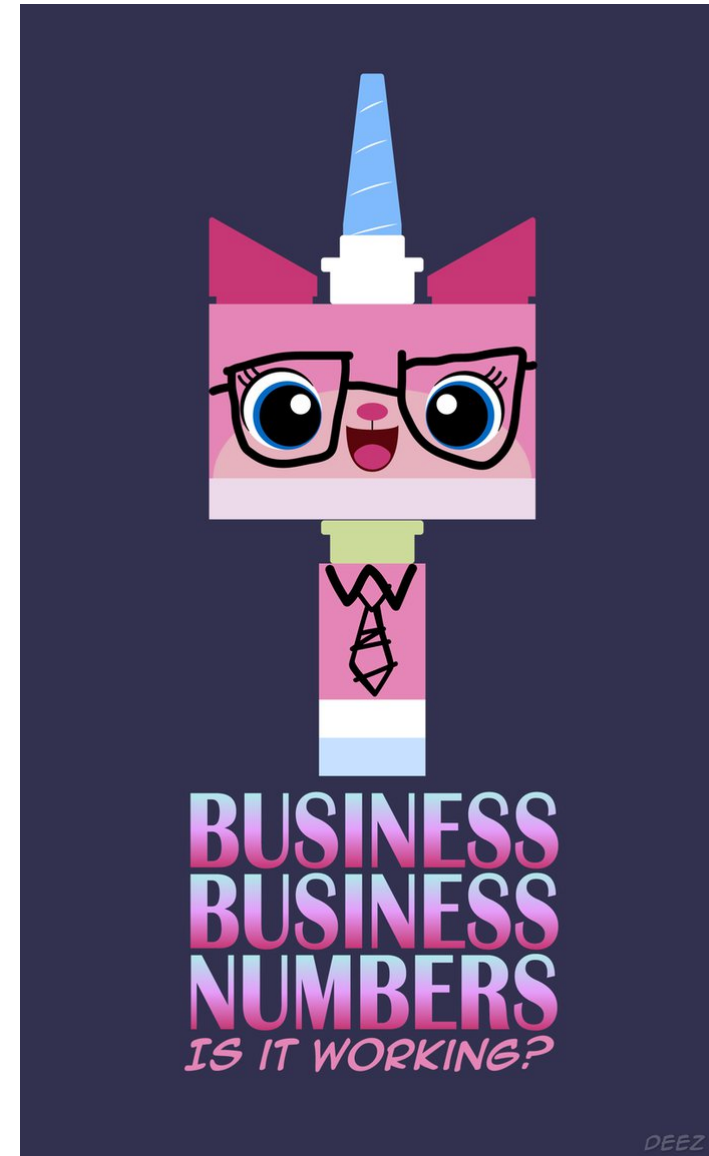
What to think about when considering measurement methods

- Comparability
- Repeatability
- Bias
- Prioritization

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What we've talked about:

- We can be AWESOME and build epic systems
- Research shows us that good tech drives value
- Good measurement helps us do this
  - Measure things that matter
  - Focus on both inputs and outcomes
  - Collect measures from both systems AND people
  - Consider comparability, repeatability, bias, and improvement

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For more information:

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DEVOPS RESEARCH & ASSESSMENT

Get our ROI whitepaper, find case studies, learn about assessment, & get peer-reviewed research

devops-research.com

Thank you!

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