Expect the Unexpected

Preparing SRE Teams for Responding to Novel Failures

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shopify

Help > About

John Arthorne

- Developer/Manager/SRE at Shopify

Shopify

- Software for Commerce
- 30 → 120 SREs
- Average $1700 GMV / second

What We'll Cover

- Why should I care about incident prep?
- Survey of incident preparation practices
- Preparing for truly unexpected failures

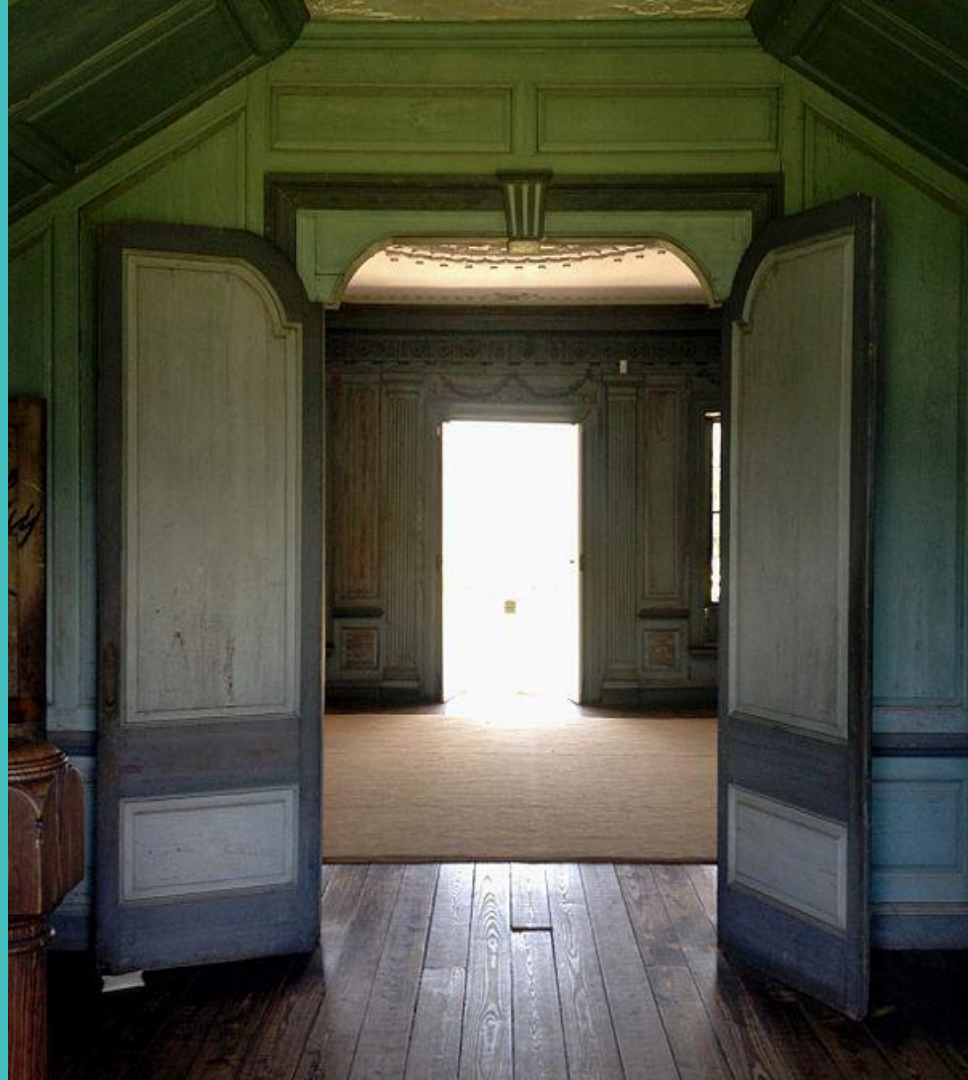
SRE practices lead us to a

high failure novelty rate

- Engineers love orderly and predictable
- Deliberate practice makes incidents more comfortable
- How do we practice the unpredictable??

Transparent Response

- Make realtime shadowing easy
- All decision making and data behind it shared widely
- Senior staff leading by example. Not knowing or guessing wrong is ok.

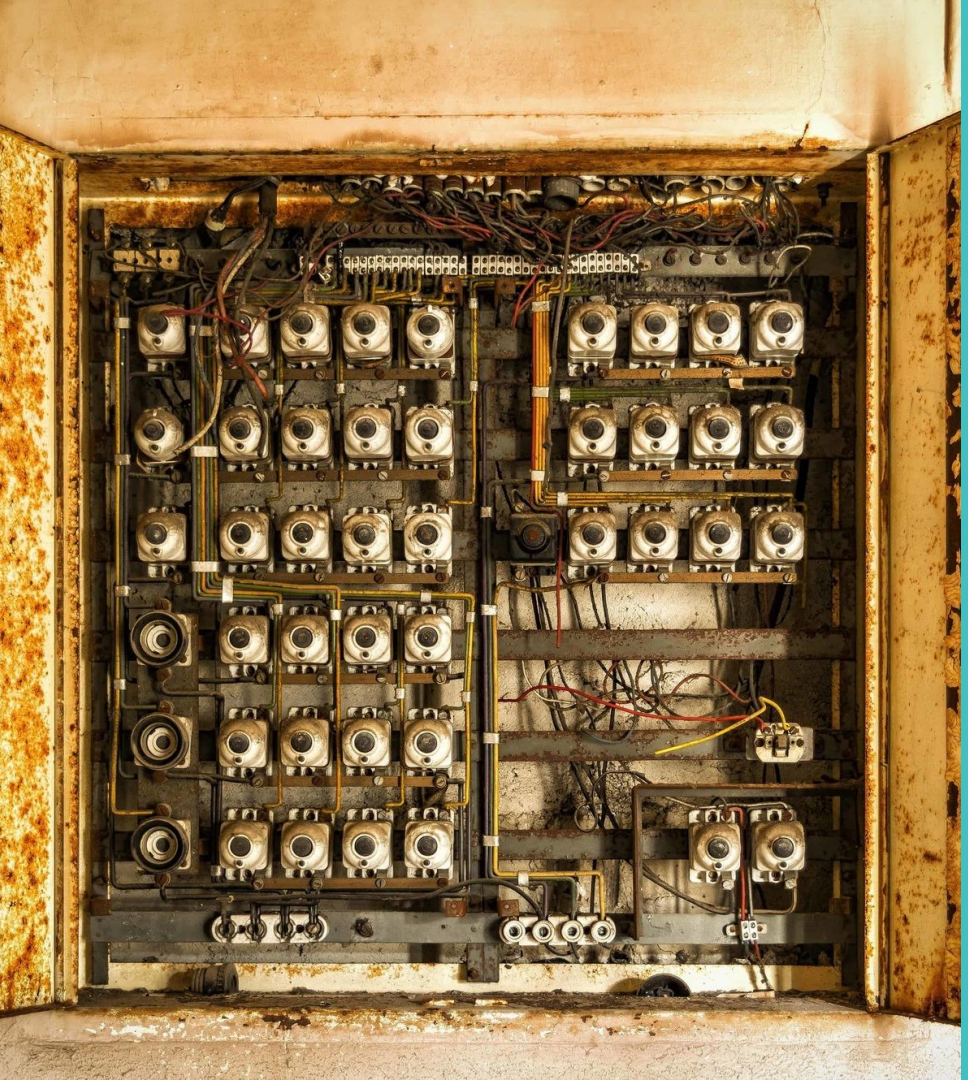


Incident Simulation

- aka “Wheel of Misfortune”
- Enables taking on incident response role in a safe practice environment
- Caveat: only as good as existing human understanding of the system

Game Days

- Start from hypothesis of system behavior in failure state
- Induce real production failure
- Observe, recover, adapt

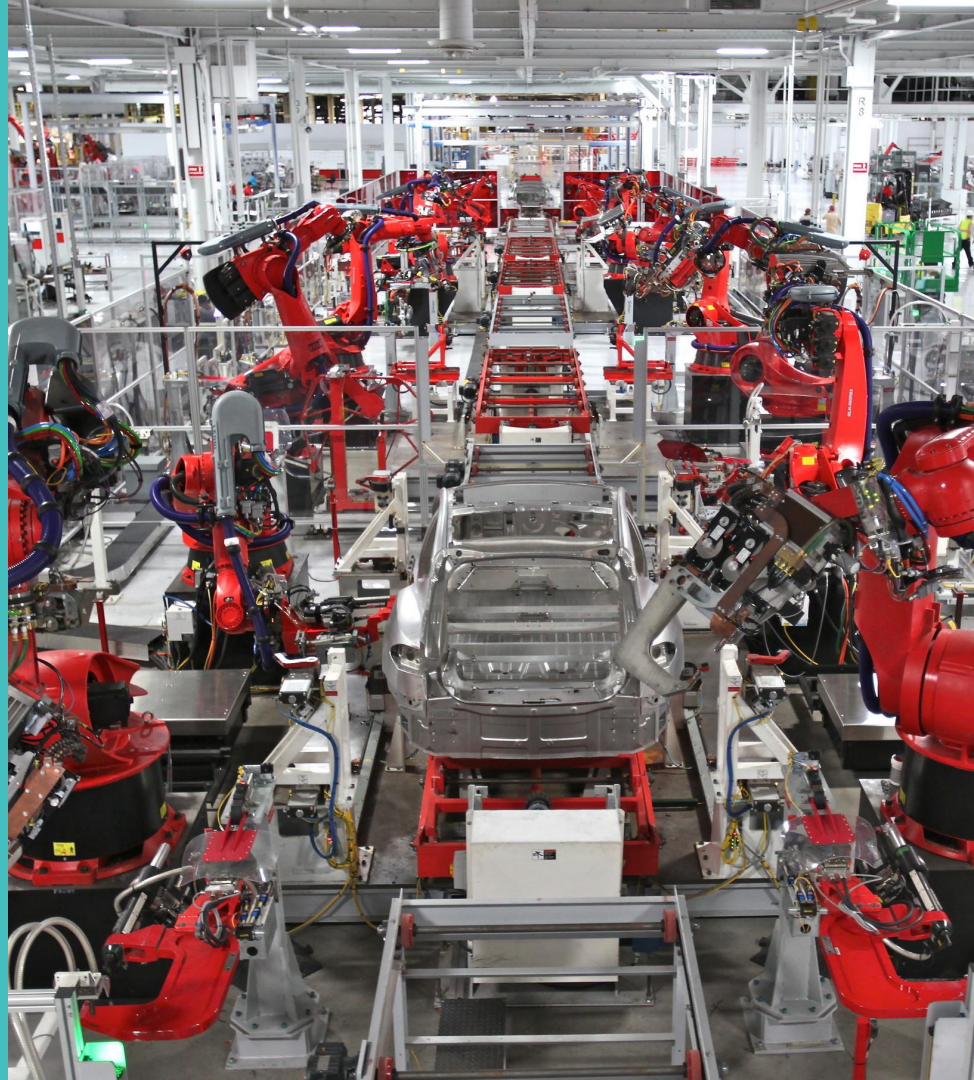


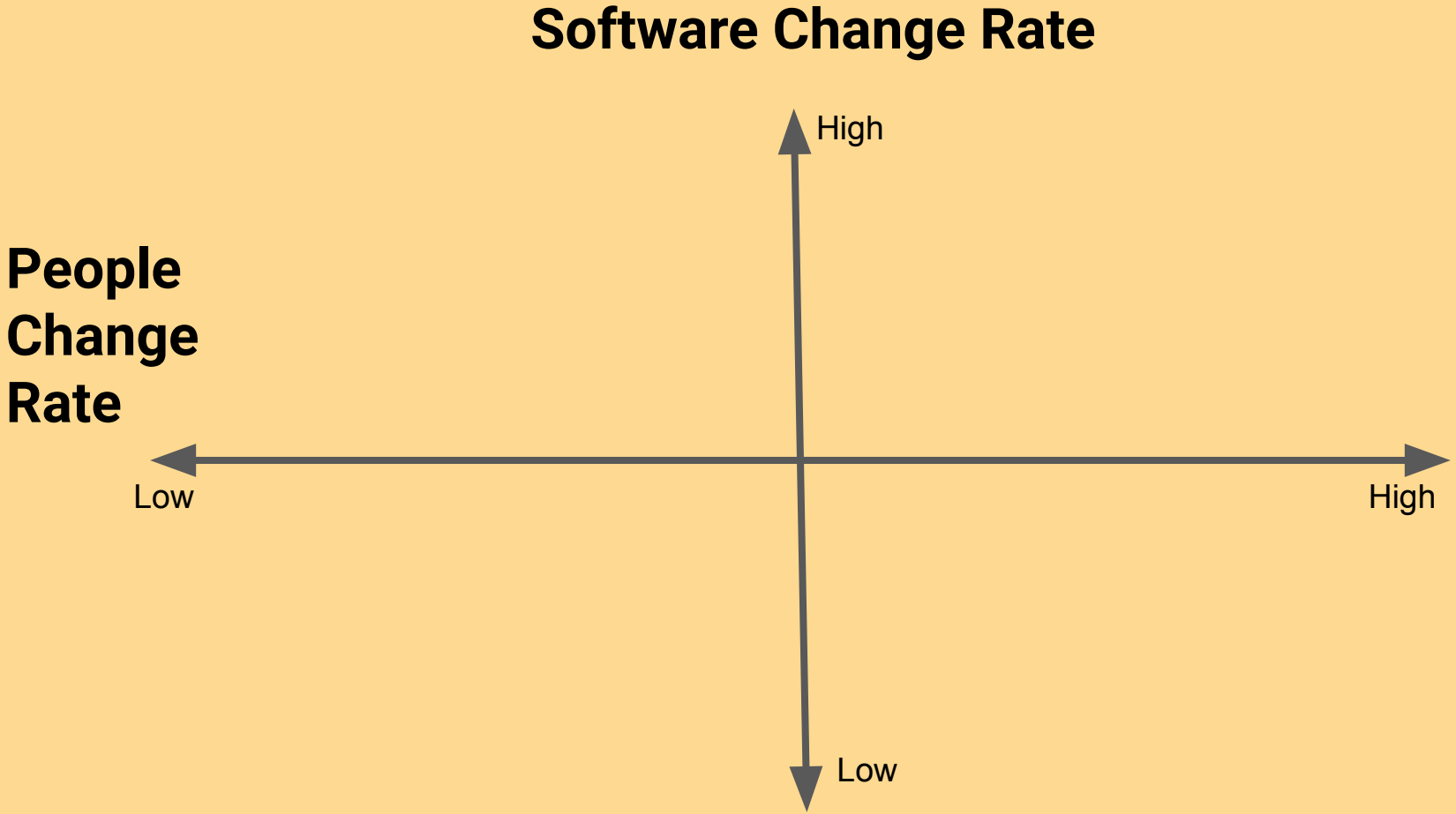
Turn Rusty Knobs

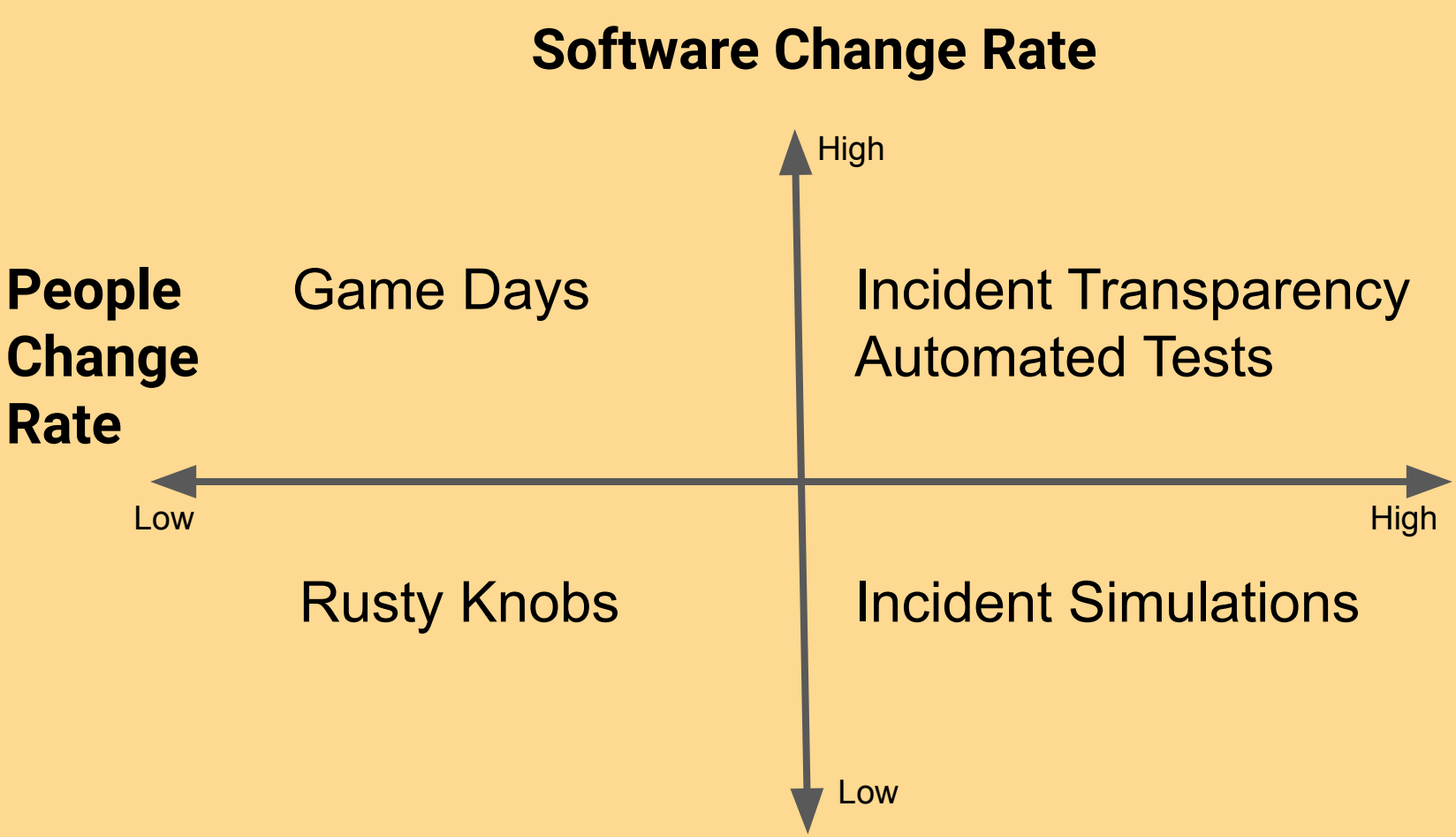
- Exercise failure recovery practices and software in production
- Builds confidence that it will work when needed
- Weather events are a good forcing function

Automated Failure Tests

- Focus on most routine failures: timeouts, connection failures
- Many open source tools available to help
- Caveat: Can’t validate full system behavior




Software Change Rate
People Change Rate
High
Low
High
Low


Software Change Rate
High
People Change Rate
Game Days
Incident Transparency
Automated Tests
Low
High
Rusty Knobs
Incident Simulations
Low

Does this really help with **novel failures?**

Magic Recipe for Novel Failures

High trust teams

Communication

Creativity

Fast consensus

Calculated risk-taking

Empathy

Training Exercise Formula

- Very clear or intuitive end goal
- Little or no added constraints
- Progressive disclosure of new information
- Randomized teams
- Fun!!

LEGO
16+
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10260
LEGO
70618
LEGO
NINJAGO
Masters of Spinjitzu
Ages/edades
9-14
70655
1660 pcs/pzs
LEGO
STAR WARS
75190
Disney

1:59 PM
Kyle Denault
LEGO

Summing Up

Successful SRE teams see a continual drift toward novel failures

Many practices available to prepare the people, systems, and teams for responding to failures

Don’t overlook the importance of a strong team culture emphasizing trust and creativity

Thank You!

github.com/jarthorn/lego-incident-response

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