

Breeding 10x Developers with Developer Productivity Engineering



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Field CTO & Chief Evangelist



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With Developer Productivity Engineering



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Justin has over 20 years of experience working in various software roles including JEE work. He is an outspoken free software evangelist, delivering enterprise solutions, technical leadership, various publications and community education on databases, architectures, and integration projects.

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10X ENGINEER



Myth Origin (probably) The Coding War Games





Peopleware

Productive Projects
and Teams

THIRD EDITION



Tom DeMarco
&
Timothy Lister



The “best” programmers outperformed the worst by **roughly a 10:1 ratio**

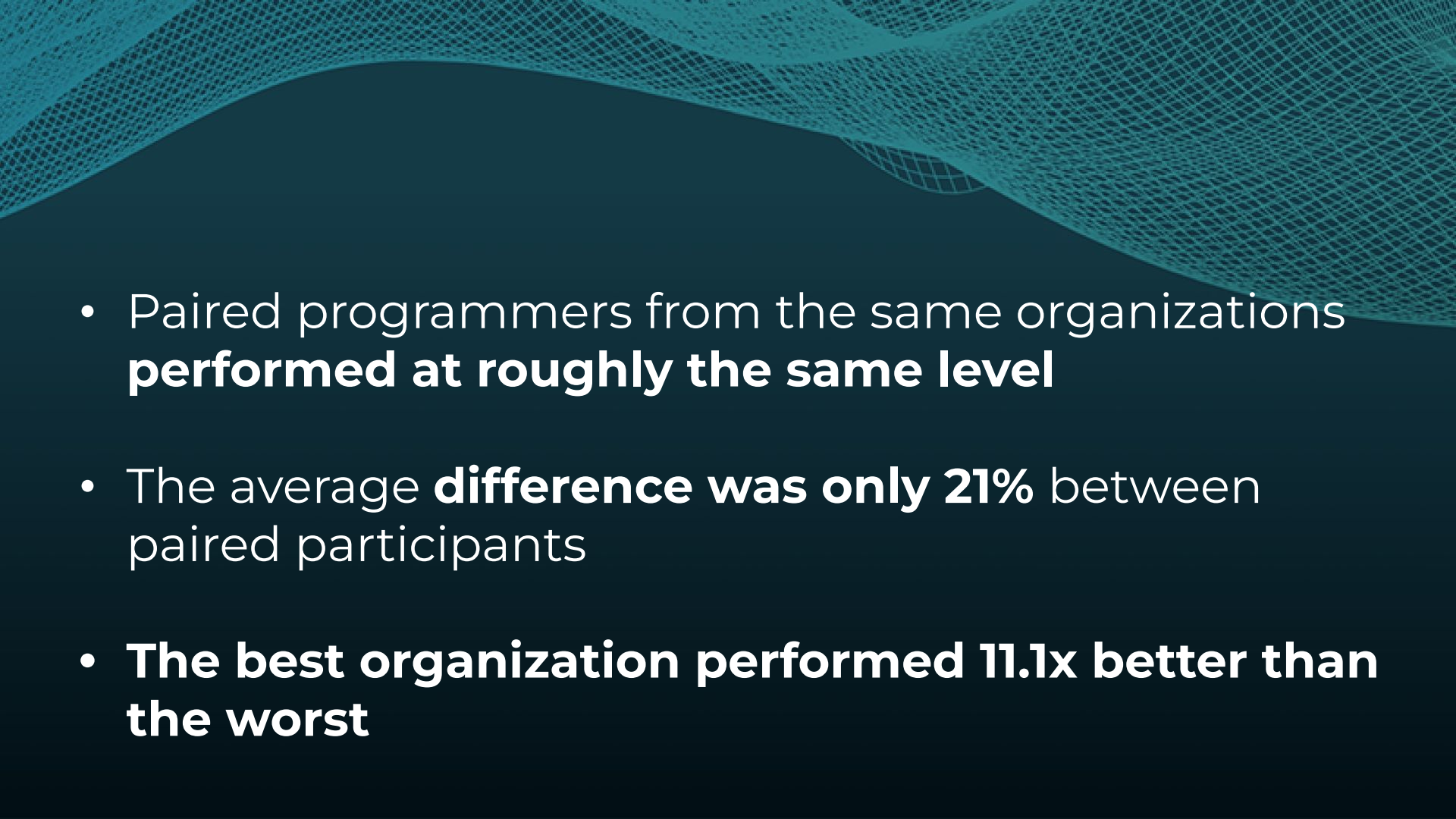
There were some interesting “non-factors”:

Language

Years of Experience

Number of Defects

Salary

- 
- The background of the slide features a teal-colored wavy mesh pattern that flows across the top and sides, creating a sense of movement and depth. The main content area is a solid dark teal color.
- Paired programmers from the same organizations **performed at roughly the same level**
 - The average **difference was only 21%** between paired participants
 - **The best organization performed 11.1x better than the worst**

The best performers are clustering in some organizations while the worst performers are clustering in others.

Some companies are doing a lot worse than others.

Something about their environment and corporate culture is failing to attract and keep good people or is making it impossible for even good people to work effectively.

Average performance of those in the top quarter was 2.6 times better than that of those in the bottom quarter.

Table 8.3
Environments of the Best and Worst Performers
in the Coding War Games

Environmental Factor	Those Who Performed in 1st Quartile	Those Who Performed in 4th Quartile
1. How much dedicated work space do you have?	78 sq. ft.	46 sq. ft.
2. Is it acceptably quiet?	57% yes	29% yes
3. Is it acceptably private?	62% yes	19% yes
4. Can you silence your phone?	52% yes	10% yes
5. Can you divert your calls?	76% yes	19% yes
6. Do people often interrupt you needlessly?	38% yes	76% yes

Though the phrase had not yet been coined, increased productivity came down to developer experience.



10X ENGINEER



10x Organizations are Manufactured, Not Born

This Matters Even More Now



29 Oct 2020

IDC Reveals 2021 Worldwide Digital Transformation Predictions; 65% of Global GDP Digitalized by 2022, Driving Over \$6.8 Trillion of Direct DX Investments from 2020 to 2023

... But Many Organizations Aren't Aligned



In a study dated April 27, 2022, between Microsoft and the University of Victoria in British Columbia, Developers and Managers were surveyed on their interpretation of the SPACE framework

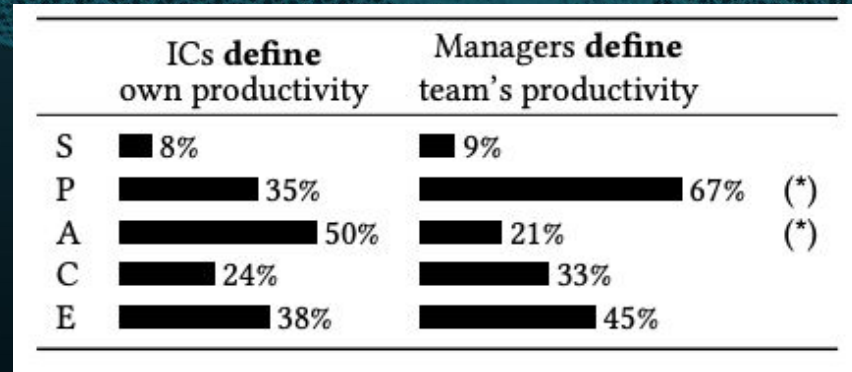
When surveyed with the following questions, **Developers and Managers answered much differently**

Developers

When thinking about your work, how do you define productivity?

Managers

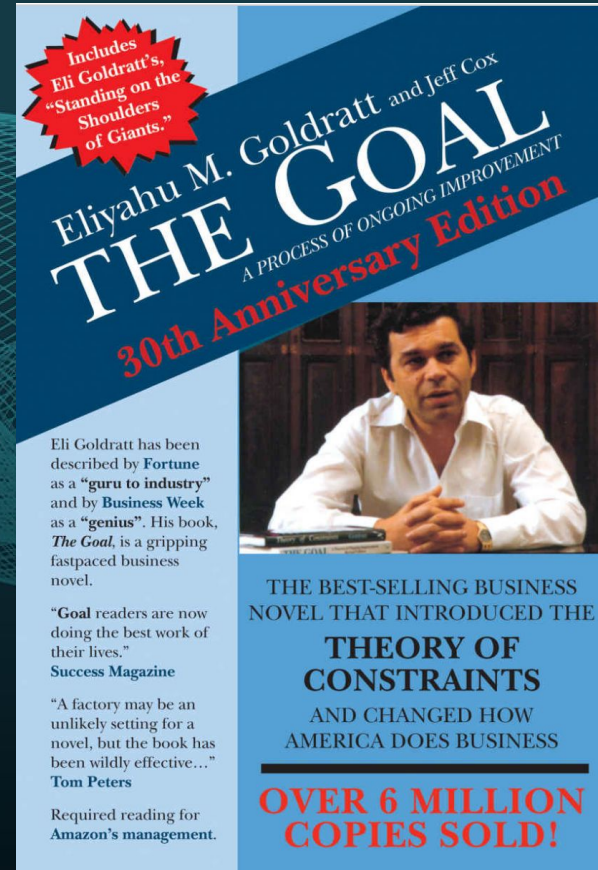
When thinking about your team, how do you define productivity?



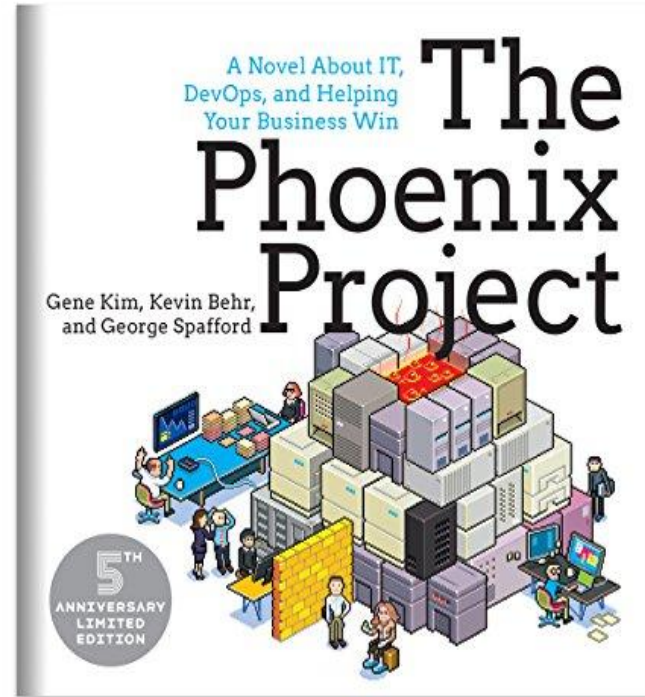
The background of the slide features a dark teal gradient. At the top, there is a decorative element consisting of a fine, light teal mesh or grid pattern that forms a series of undulating, wave-like shapes across the width of the image.

The Physics of Performance

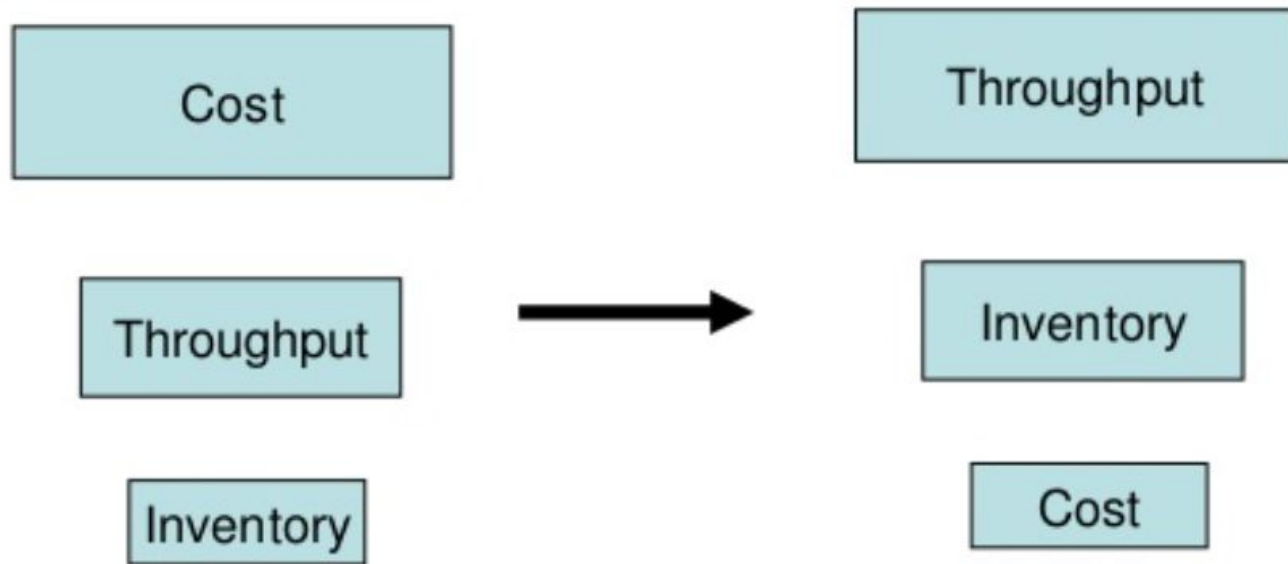
- ◆ Dr. Goldratt was a **physicist turned business novelist**
- ◆ His most famous work is the **Theory of Constraints**, which has helped form the foundations of modern business productivity theory
- ◆ **DevOps, Agile, Lean, etc**, all stem from the Theory of Constraints
- ◆ The theory focuses on treating organizations as complex machines, and **eliminating bottlenecks** to improve organizational efficiency



- ◆ **Modernizes the Theory of Constraints** for software organizations
- ◆ A fun read, business drama, **not textbook** format
- ◆ Demonstrates the relationship between **DevOps and throughput optimization**
- ◆ **Teaches the importance** of VSM, observability, and continuous improvement



Change in Focus from the “cost world” to the “throughput world”

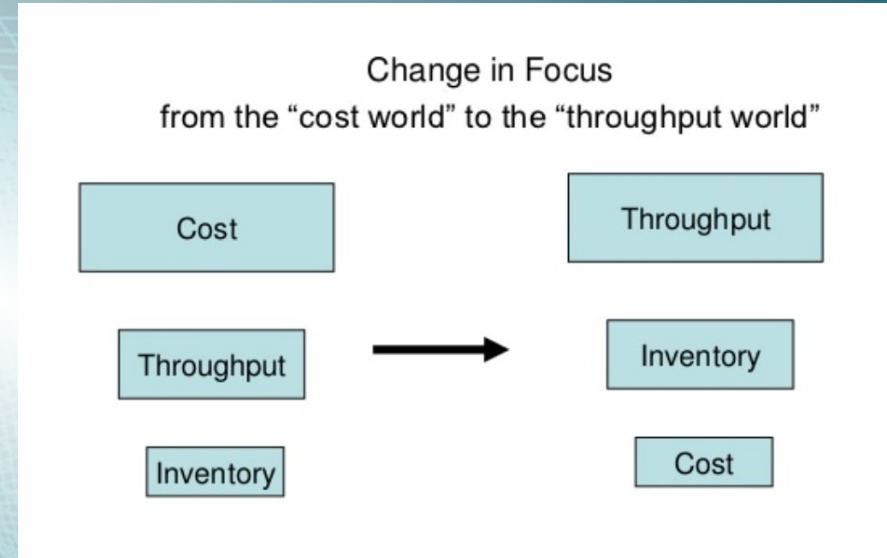


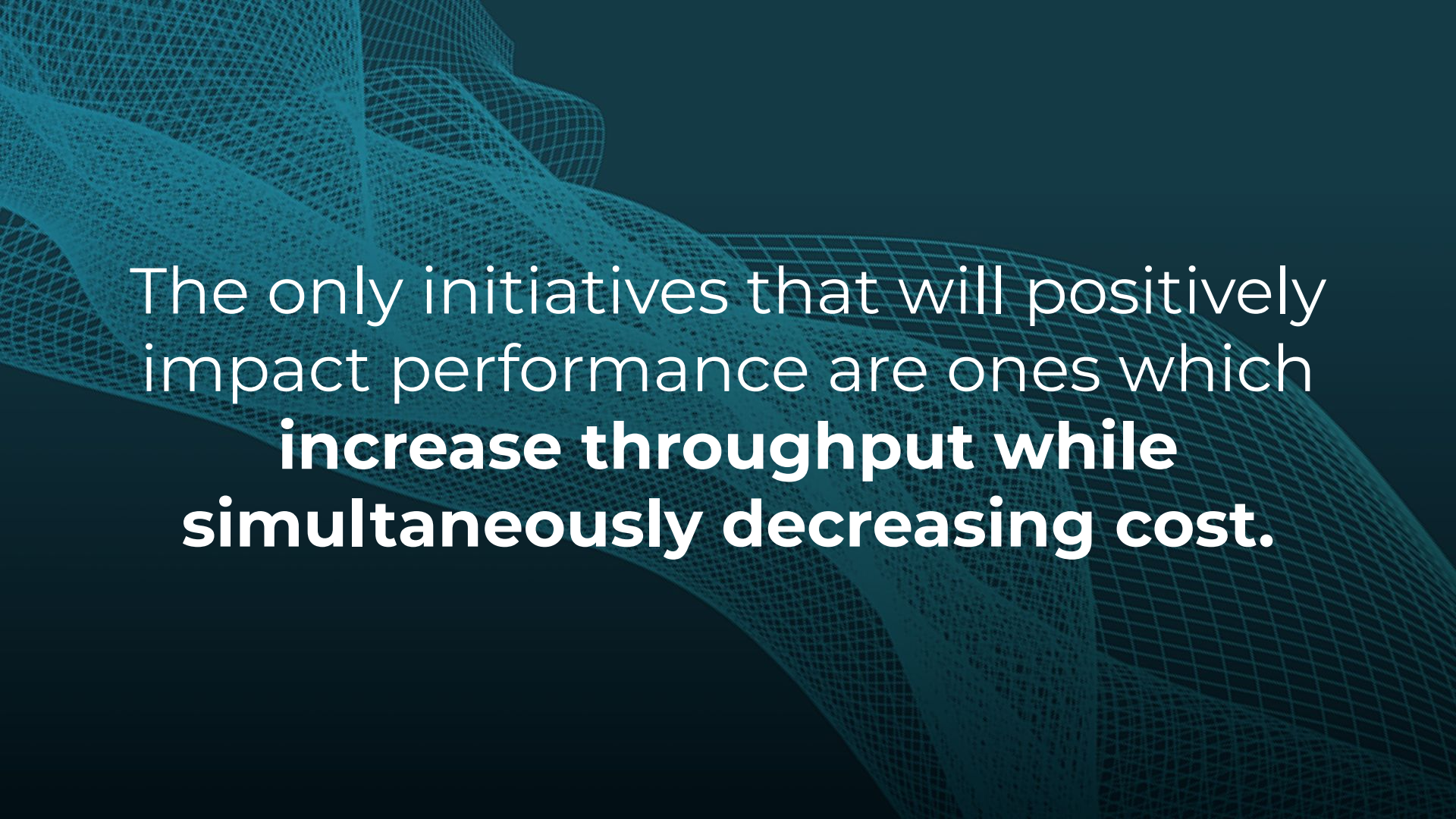
Imagine.....

Cost = Organizational Cost

Inventory = Code

Throughput = Money





The only initiatives that will positively
impact performance are ones which
**increase throughput while
simultaneously decreasing cost.**

The background of the slide features a dark teal color with a complex, wavy wireframe mesh pattern in a lighter teal shade, creating a sense of depth and movement.

It's Time for Developer Productivity Engineering

1970s+

JIT
Manufacturing

1980s+

Business
Process
Reengineering

1990s+

Change
management

2000s+

Agile, Lean Six
Sigma

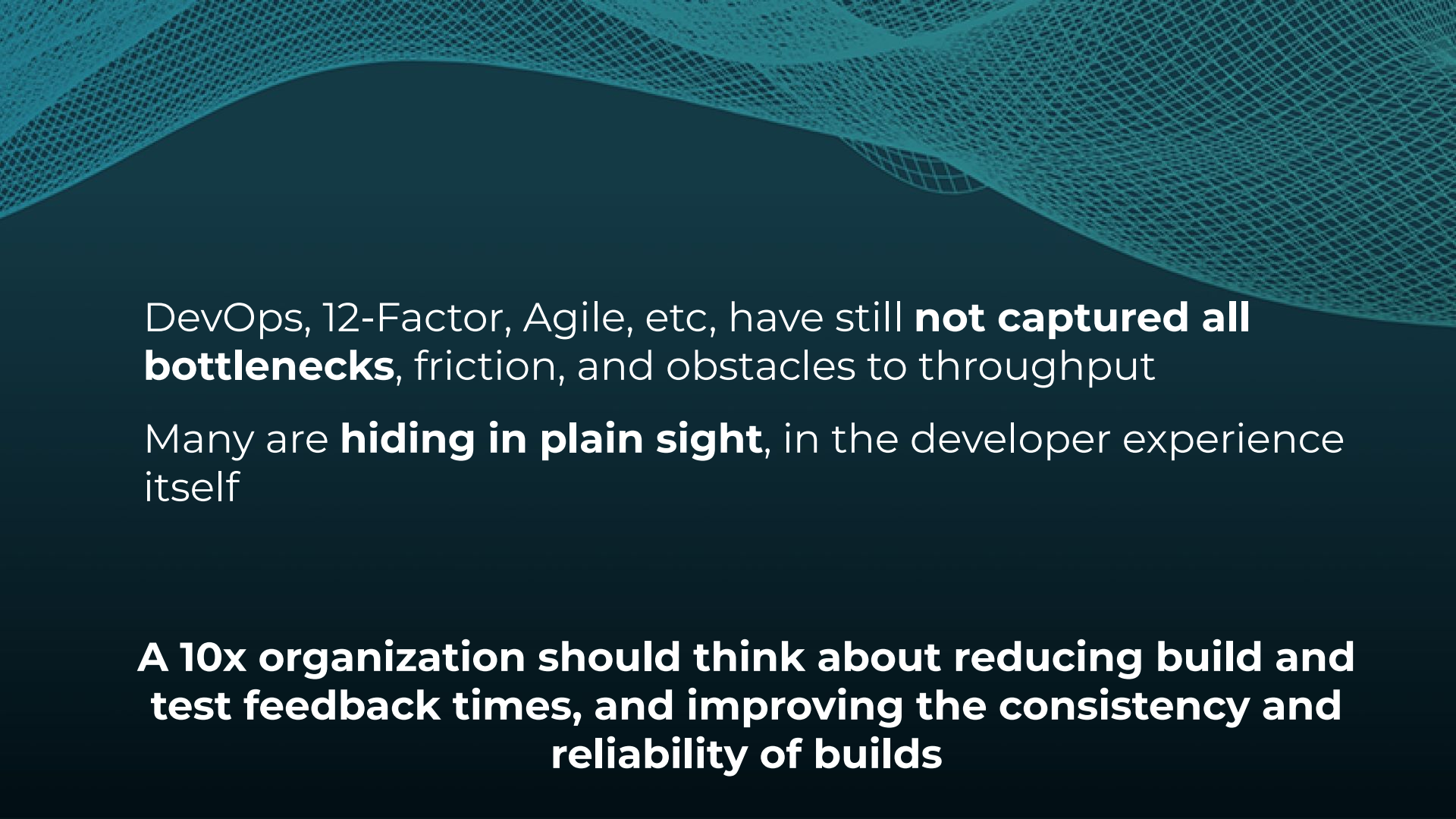
2010s+

DevOps

2020+

DPE

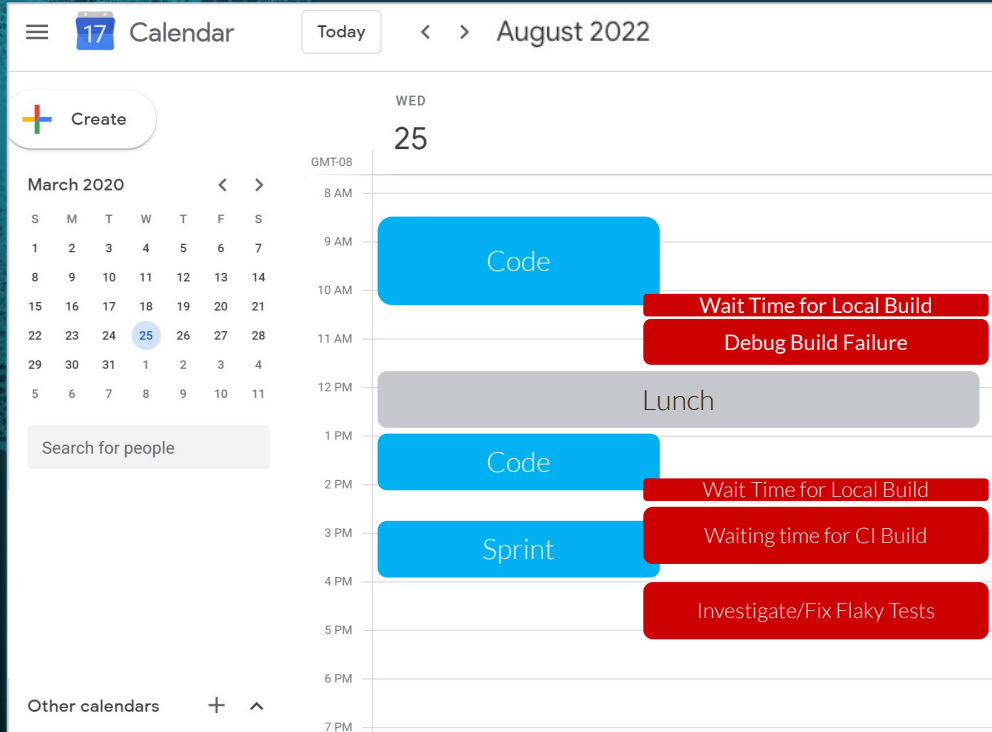


The background of the slide features a teal-colored wavy mesh pattern that flows across the top and right sides, creating a sense of movement and depth. The rest of the background is a solid dark teal color.

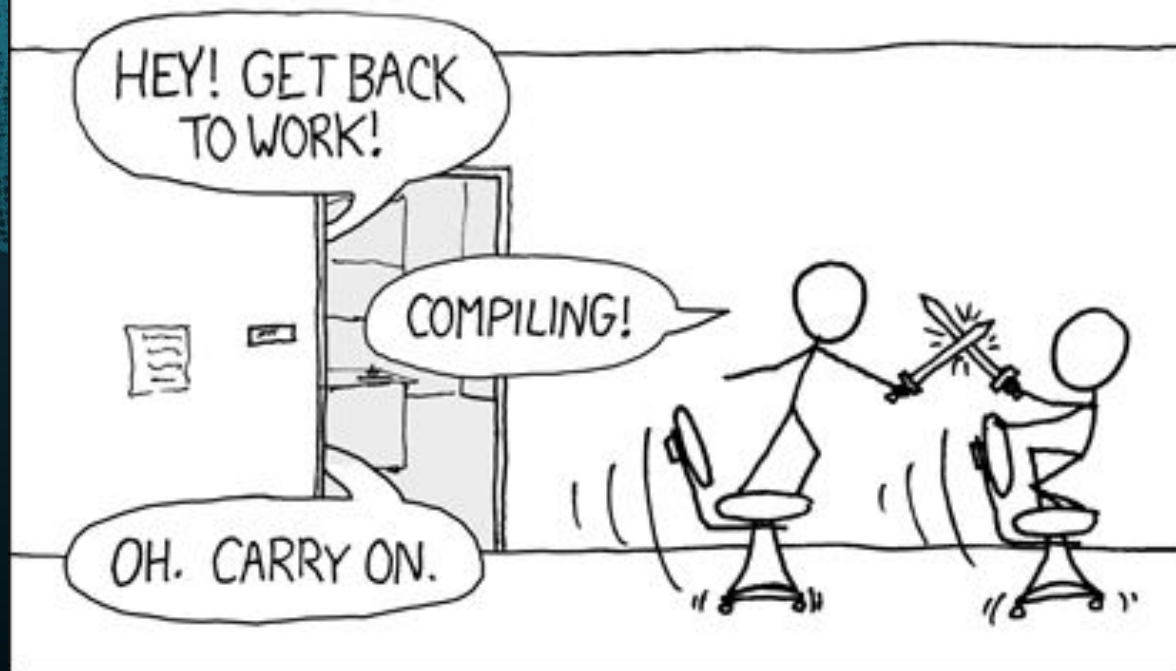
DevOps, 12-Factor, Agile, etc, have still **not captured all bottlenecks**, friction, and obstacles to throughput

Many are **hiding in plain sight**, in the developer experience itself

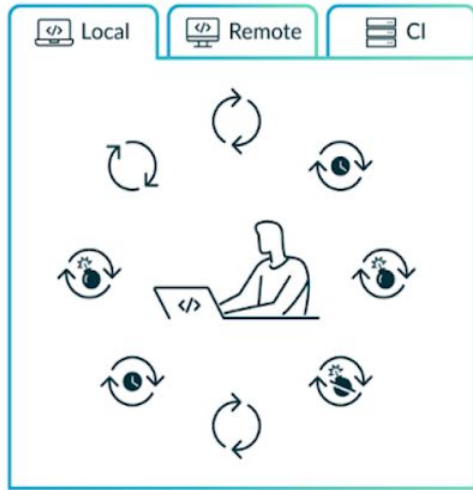
A 10x organization should think about reducing build and test feedback times, and improving the consistency and reliability of builds



THE #1 PROGRAMMER EXCUSE
FOR LEGITIMATELY SLACKING OFF:
"MY CODE'S COMPILING."



What Problems Does DPE Solve?



240 days per year



100s of developers



Productivity



Cost

10s of millions



This takes too long!



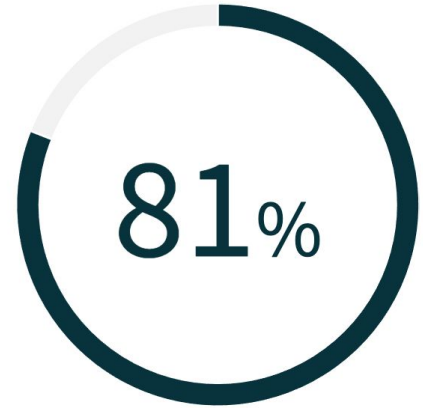
This takes too long to fix



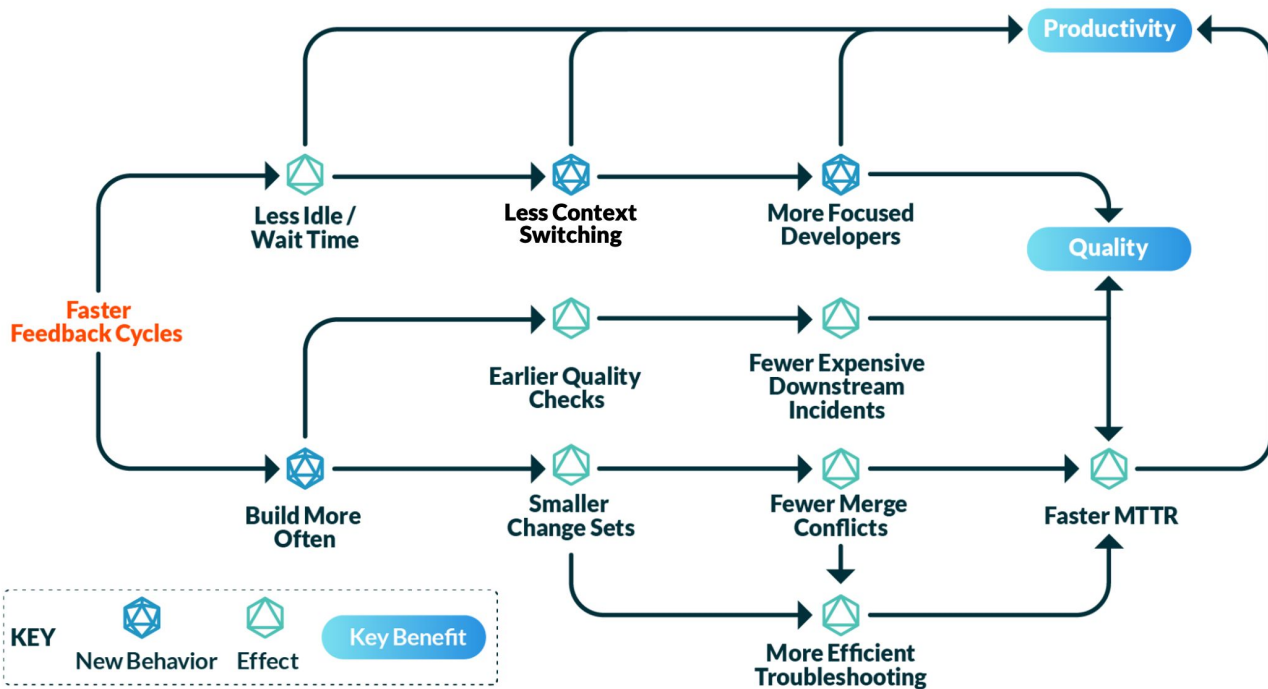
This should have been observable

DPE Fosters Developer Joy

81% of surveyed IT professionals would Agree that DPE's impact on their toolchain makes their job more enjoyable.



Very Fast Feedback Is Important



DPE Organizations Eliminate Avoidable Failures

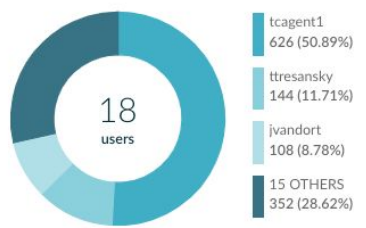


Builds with matching failures

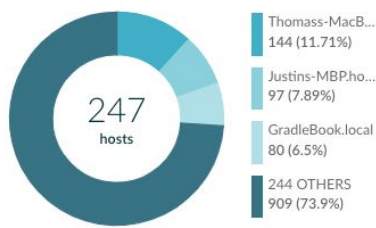
1.23K (2% of 59K total builds)



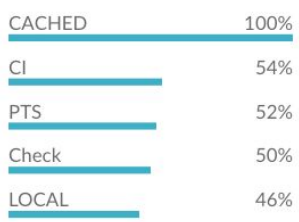
Affected users



Affected hosts



Top Tags



Failed builds (50 most recent)

Start time	Project	Requested tasks/goals	User	Hostname
today at 1:00:47 AM	gradle [CACHED] [LOCAL] [IDEA] [dirty]	:core:embeddedIntegTest --tests org.grad.jvandort		Justins-MBP.home
Execution failed for task ':core:embeddedIntegTest'. > There were failing tests. See the report at: file:///Users/javandort/work/gradle/subprojects/core/build/reports/tests/embeddedIntegTest/index.html				

DPE Organizations Track Failure Rates

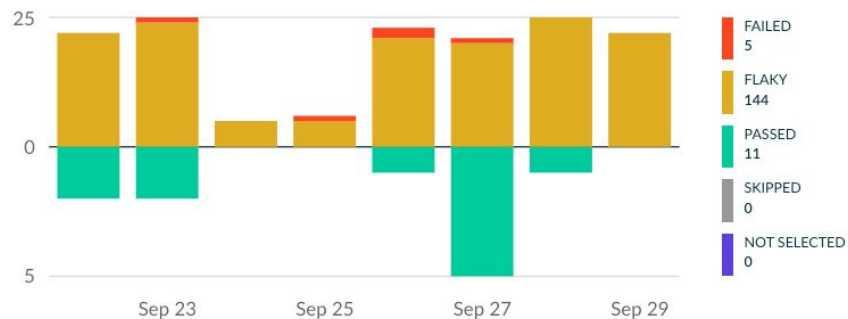
Dealing with Flaky Tests

The test is flaky. What do you do now?

- a. Try it again
- b. Re-run it
- c. Re-run it again
- d. Ignore it and approve PR
- e. All of the above

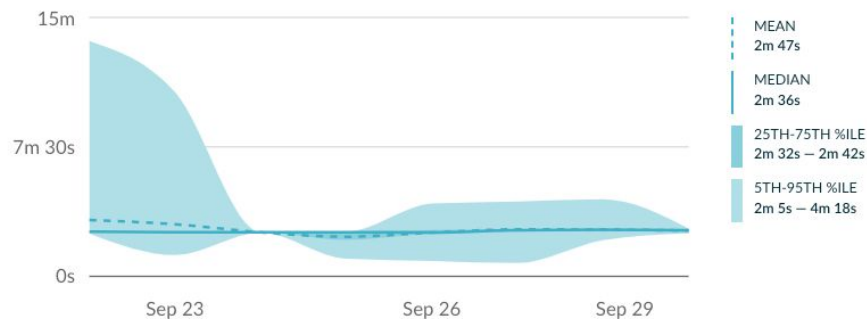
Builds that executed test class

160 builds



Mean execution time for test class

2 min 47 sec



Tests by flaky count

Name

performs static validation of plugins used by the Gradle build

Outcome trend



Failed

5 (3%)

Flaky

144 (90%)

Passed

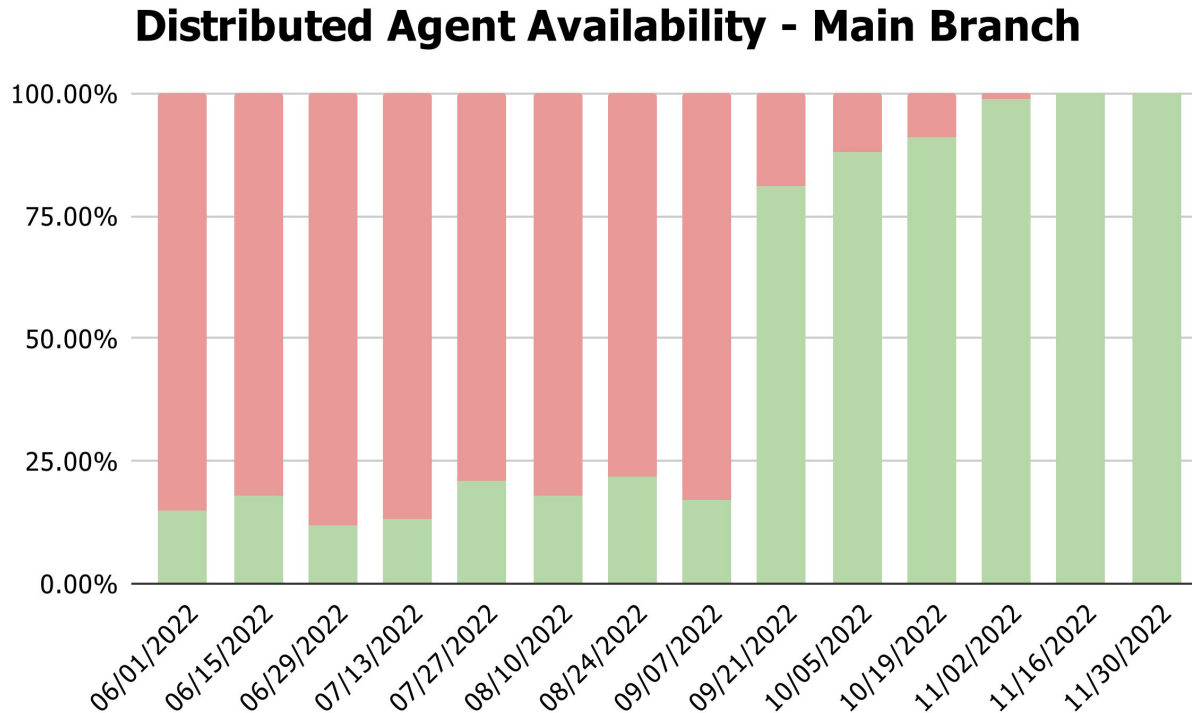
11 (7%)

Mean execution time

2 min 47 sec

DPE Organizations Analyze Flaky Tests

All Of This Will Improve CI



The background of the slide features a dark teal color with a complex, wavy mesh pattern in a lighter teal shade at the top, creating a sense of depth and movement.

**DPE Will Become Standard Practice
Because the World Should Foster Developer Joy**

The image features a dark teal background with a complex, wavy wireframe pattern in a lighter teal color. This pattern resembles a 3D mesh or a topographical map, with peaks and valleys that create a sense of depth and movement. The lines of the wireframe are thin and intersect to form a grid-like structure that follows the contours of the waves. Centered horizontally and slightly above the middle vertically is the text "NEXT STEPS" in a bold, white, sans-serif font. The text is clear and stands out against the darker background and the intricate wireframe design.

NEXT STEPS

DPE Organizations Build Focused Teams

NETFLIX JOBS

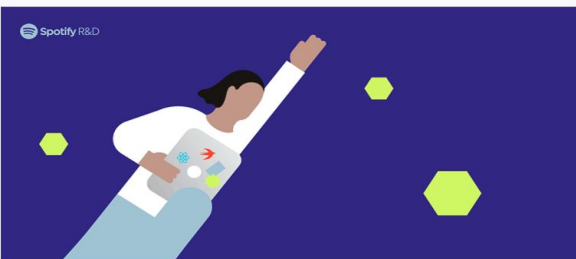


Senior Fullstack Software Engineer, Developer Productivity

Remote, United States Remote, United States
Partnership

How We Improved Developer Productivity for Our DevOps Teams

August 27, 2020
Published by Maria Jernström and Jason Palmer



LinkedIn Careers

Why LinkedIn

Productivity & IT

Build and refine the technology, tools, and systems our employees need to succeed. Our Productivity and IT team includes Developer Productivity and Enterprise Productivity.

Twitter Careers



Search roles

Senior Software Engineer - Developer Productivity

Team



SOUNDCLOUD IS HIRING A

Backend Engineer, Engineering Productivity



Products Customers Learn Company Pricing

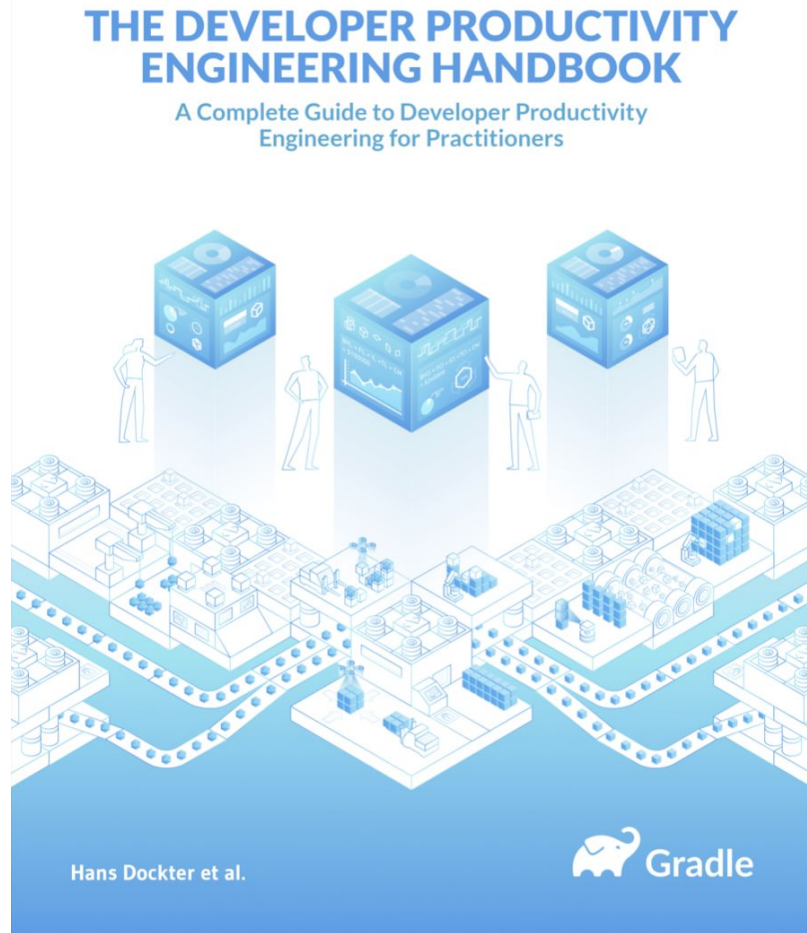
All Jobs / Engineering / Cloud - Tech Lead, Engineering Productivity



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There's a Book for This



Customers

OSS Projects Revved Up by Gradle Enterprise

Gradle is proud to support key open-source projects with FREE instances of Gradle Enterprise.



Gradle Enterprise is quickly emerging as a *de facto* standard tool for build and test data analytics and as a source of acceleration technology for many of the most important open source projects. Here is a roundup of OSS projects that rely on Gradle Enterprise to improve build and test feedback cycle times and make troubleshooting more efficient by combining root cause analysis data with failure analytics.

Spring



Spring is the world's most popular Java framework for making Java programming quicker, easier, and safer for everybody. Gradle Enterprise is being used by the Spring Boot, Spring Framework, and Spring Security projects. After the Spring Boot project [migrated from Maven to the Gradle Build Tool](#) and further optimized the Build Cache effectiveness with Gradle Enterprise, CI builds now take roughly 20 minutes on average, 3-4 times faster than before. Local builds are taking an average of 2.5 minutes, which is 20-30 times faster than before. The team has also started looking at Gradle Enterprise Failure Analytics to address flaky tests and other avoidable failures.

[Find out the Details](#)

SCAN ME



The background features a dark teal gradient with a complex, undulating wireframe pattern in a lighter teal shade. This pattern resembles a 3D mesh or a topographical map, with peaks and valleys that create a sense of depth and movement. The overall aesthetic is modern and digital.

THANKS!!