



# ProdEx

## Google's Production Excellence Program

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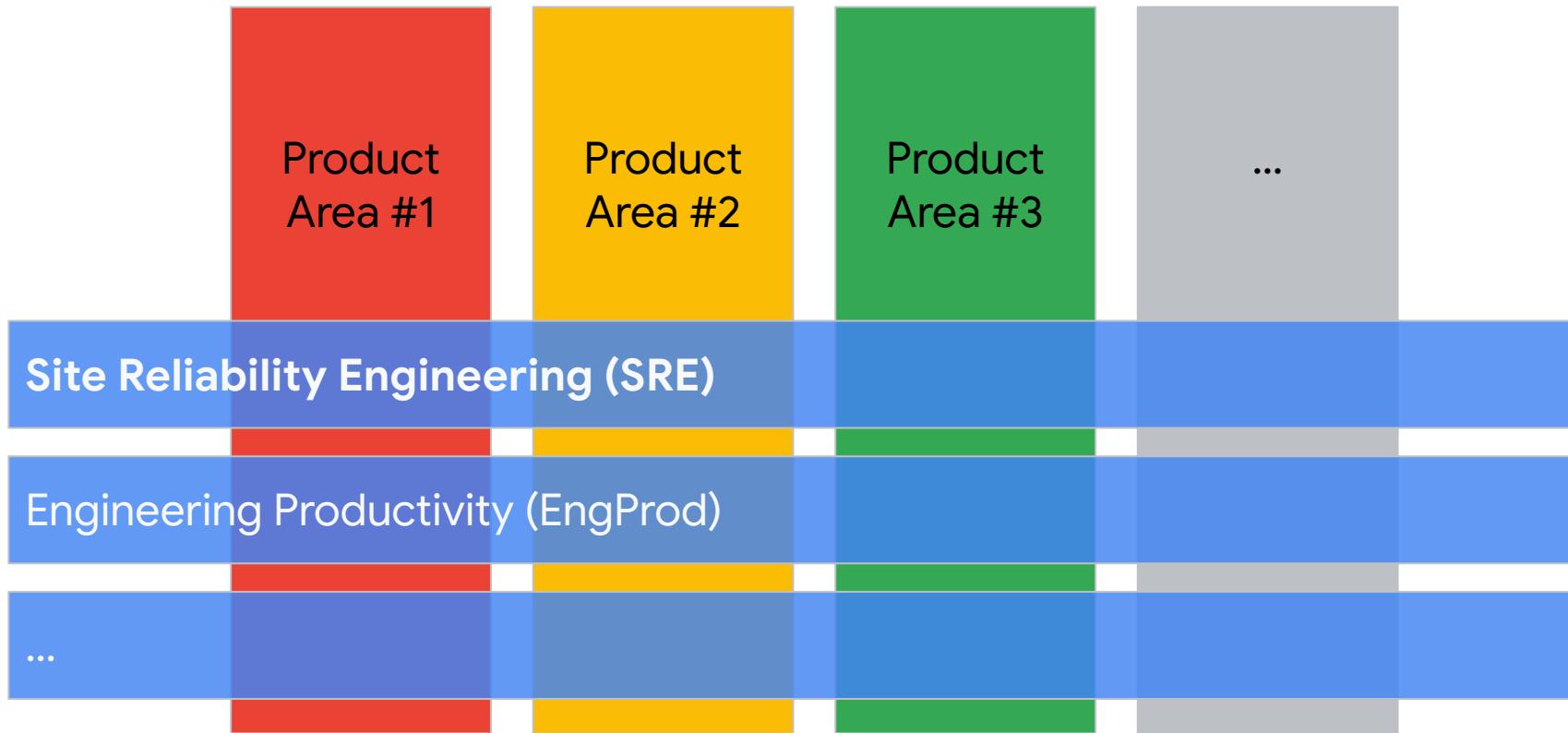
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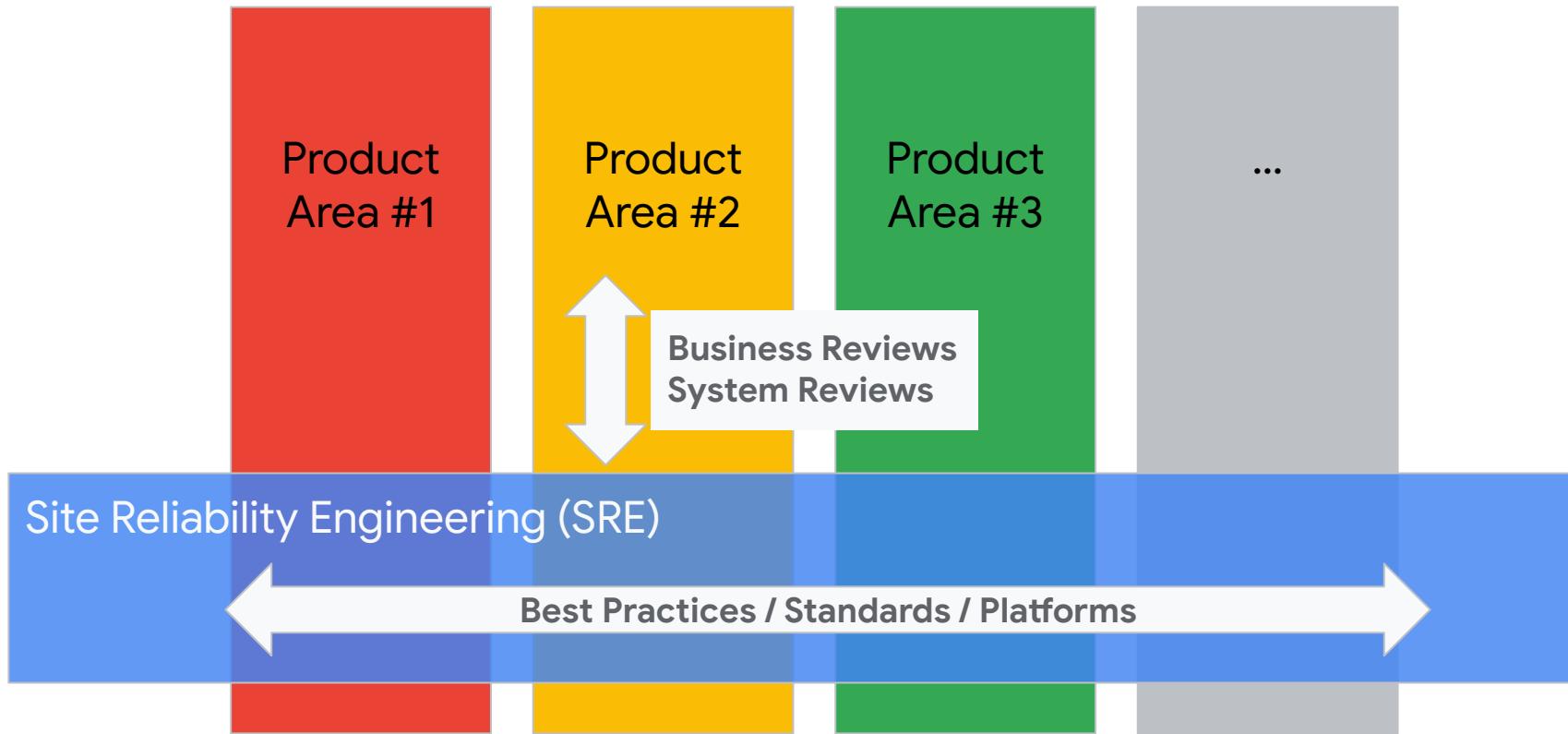


Site Reliability Engineering

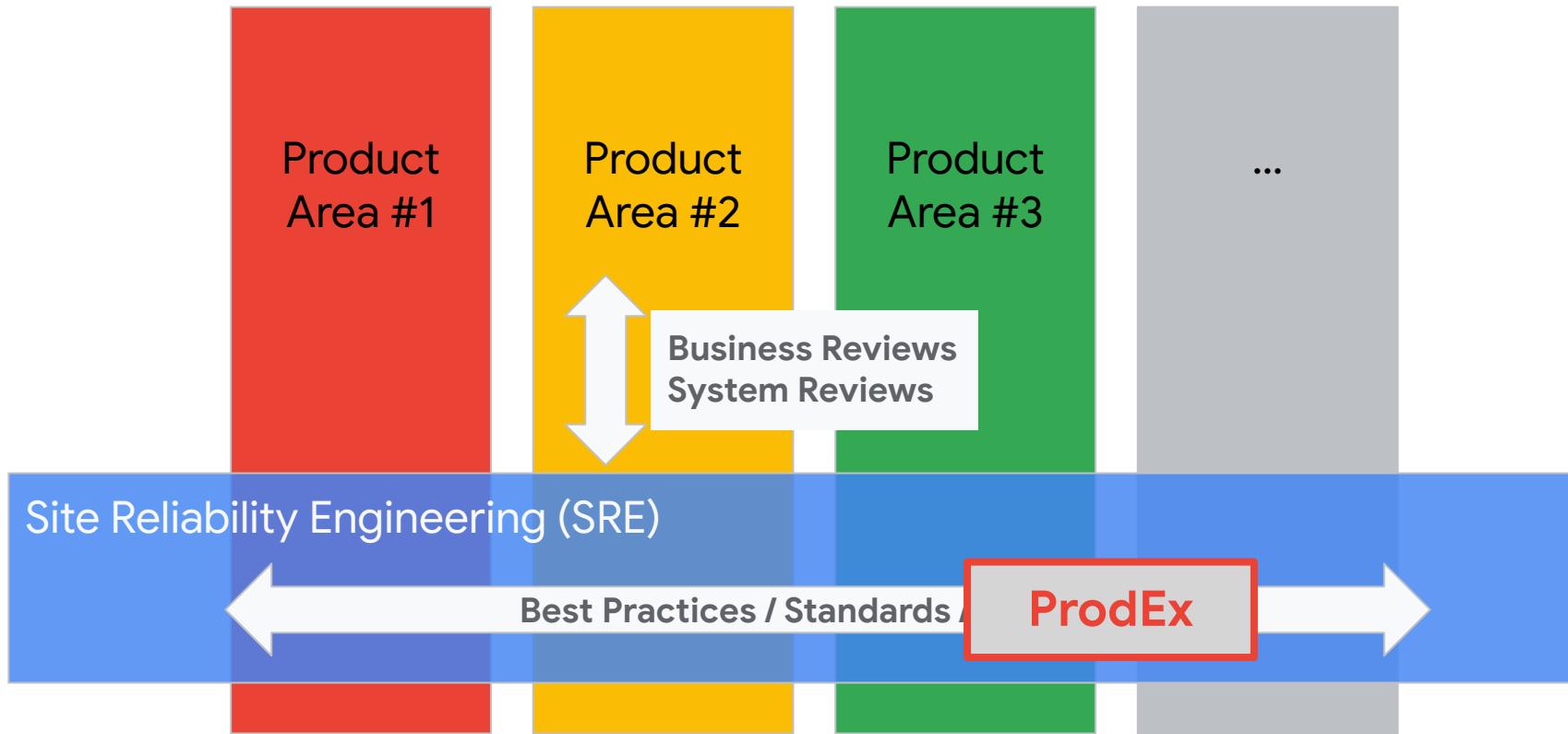
# Matrixed specialist organisations at Google



# Aligning across the matrix



# The ProdEx Program



# Goals

- Drive operational **best practices** and production **health** across SRE
- Assess the main **risk** areas for SRE-owned production services
- Identify SRE teams that may need **help**
- Provide a **coaching** opportunity for SRE teams
- Improve cross-SRE visibility and **awareness** for SRE leadership



A photograph of a man with long hair and a beard, wearing a white and blue plaid shirt, standing and pointing his right hand towards a woman. The woman is seated at a desk, wearing a bright blue hoodie, looking down at a computer screen. On the desk, there is a keyboard, a mouse, a glass, a can of Red Bull, and some food. The background is a dark room.

# Non-Goals

- Review **business alignment** or system health
- Strict enforcement of policy **compliance**
- ProdEx is not here to **criticize**, but to help and add perspective

# Approach

- Consistent **structure** with shared **metrics**.
- Dedicated **tooling** for automated **data collection** and manually provided context
- **2 senior reviewers** (directors/principal engineers) review the findings with the team
  - Usually not from the same area as the reviewed team
- Teams get reviewed at least annually, struggling teams more often
- Improvement opportunities are tracked as **action items**





# Program Scale

- Program started in 2015
- 100+ SRE teams signed up
- 1000+ reviews conducted
- 40+ reviewers have participated

# ProdEx Program Content

# Team information

Making sure the team has a clear and up-to-date scope and a plan to work towards its mission.

- Team charter
- Roadmap





# Oncall Health

Assessing pager fatigue, alert quality, and adequate team staffing.

- Incident load
- Unactionable incidents
- Alert-to-incident ratio
- Oncall rotation staffing

# Projects vs. Interrupts

Checking if the team has enough bandwidth to do impactful engineering work.

- OKR completion
- Ticket workload
- Interrupt escalation policy





# SLOs & Postmortems

Is system performance measured, aligned with the users' needs, and actively followed up on?

- SLOs defined and signed off
- SLO rationales explained
- SLO measurement and compliance
- Useful postmortems for outages get written
- Postmortem action items get resolved

# Data Integrity

Identify risks related to losing data.

- Business-critical data sets
- Data integrity plans
- Stakeholder sign-off
- Manual/automated restore tests





# Capacity Planning

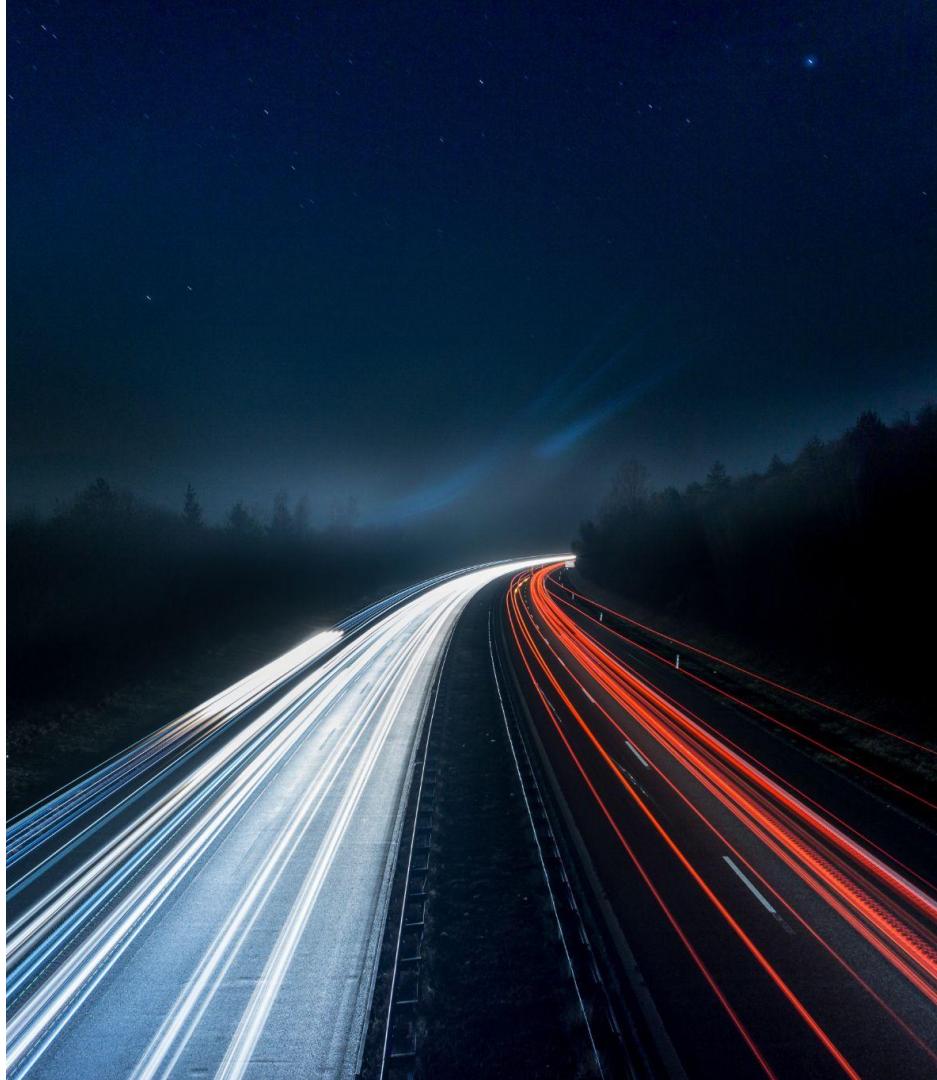
Minimize the cost incurred by suboptimal utilization and manual capacity management.

- Size-appropriate capacity planning
- Resource utilization
- Capacity alerting
- Manual resource operations

# Impact

# Impact

- Fraction of high-scoring teams increased from 23% to 66%
- Fraction of low-scoring teams dropped from 44% to 9%
- Pager load dropped by 34%
- Data Integrity turns out to be the most predictive section for the overall score
- Saved x000s hours of leadership time via automated review preparation



# Voices from our users and stakeholders



"ProdEx is one of my, and SRE leadership's, most important bits of **telemetry** about the health of SRE teams."

Ben Treynor-Sloss, VP 24x7 & founder of SRE

"ProdEx is one of the fastest mechanisms I've seen to allow leaders to build **insight** into the challenges and best practices of SRE teams from all corners of the company, and to **share that knowledge** back into the organisation."

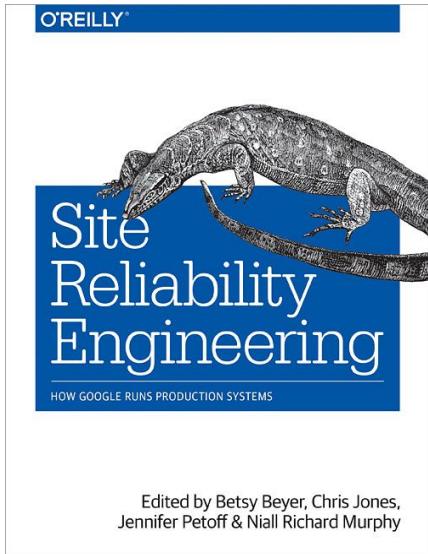
Jessica Hainey, SRE director



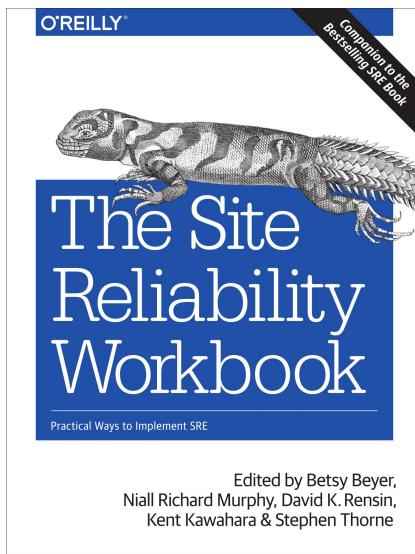
"ProdEx helped us to keep track of our **operational risks** and provided **valuable mentoring** for our long-term strategy."

Philipp Dressel, SRE manager

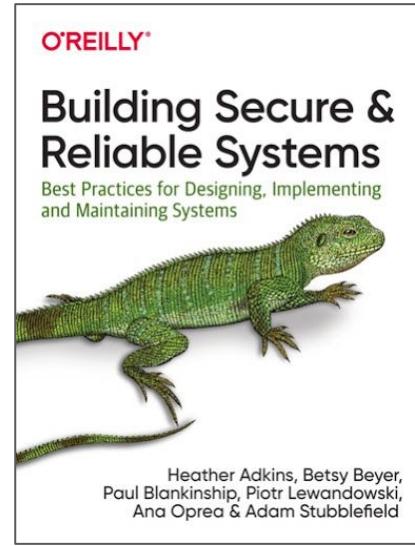
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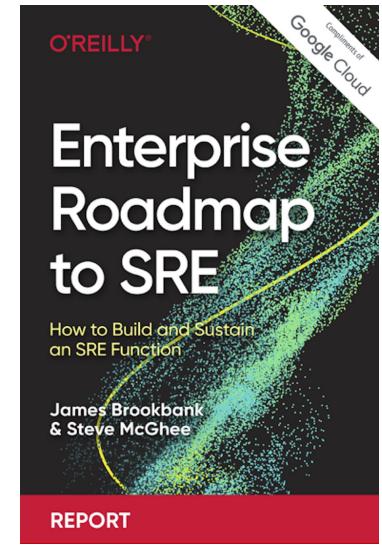
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