



Scaling Experimentation to 20 Billion Users



Timothy Chan
Data Science Lead

INTRODUCTION

About Statsig

Modern product observability company that combines experimentation with real-time analytics to give you a 360° view of your product. We help product teams build faster and make better decisions.



Expert Roots

Founded in 2021 by ex-Facebook product builders.

[Statsig.com](https://statsig.com)



Rapid growth

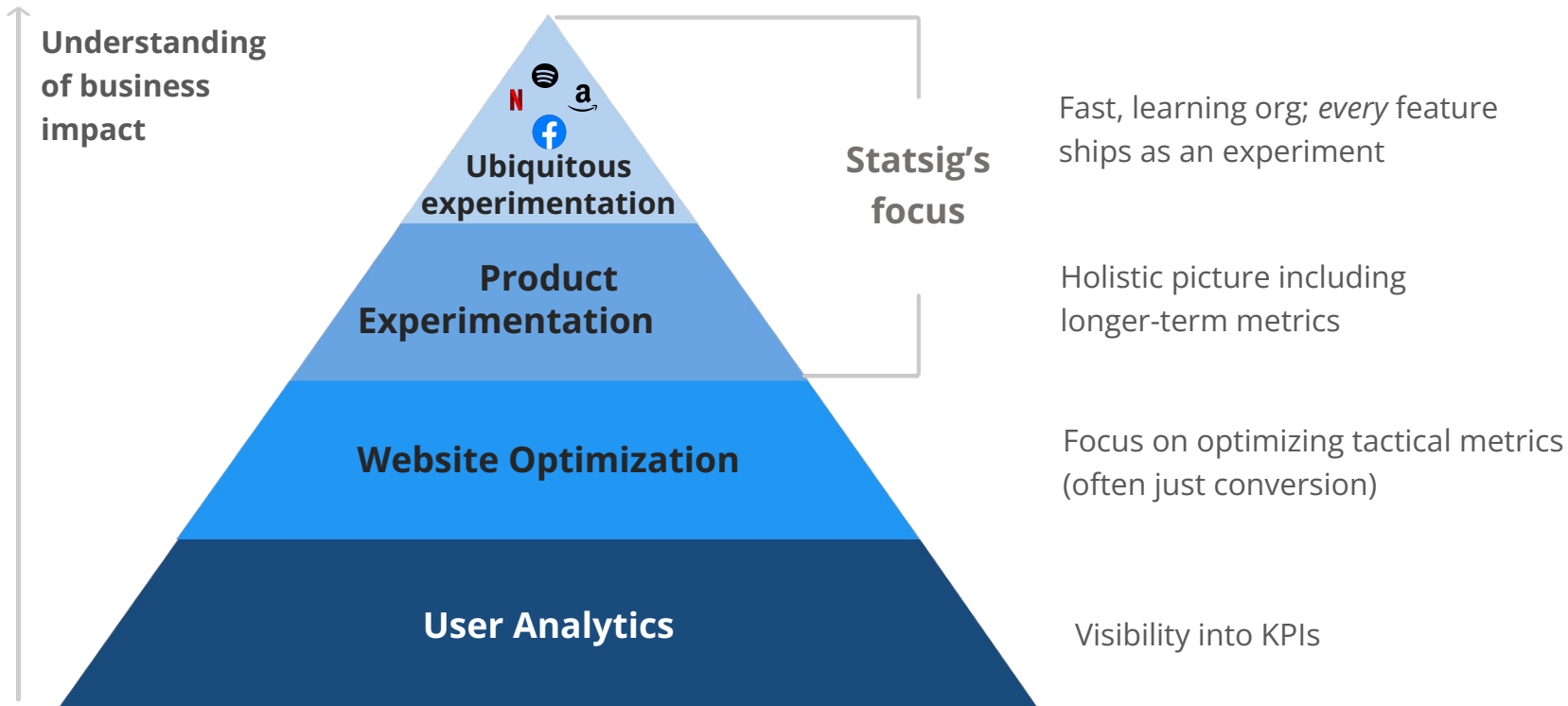
Serving results for thousands of experiments and insights across billions of users (unique identifiers).



Key Customers

Used by many modern tech companies like Notion, Flipkart, Eventbrite, Ancestry, Figma and Microsoft.

Product Analytics Hierarchy of Needs

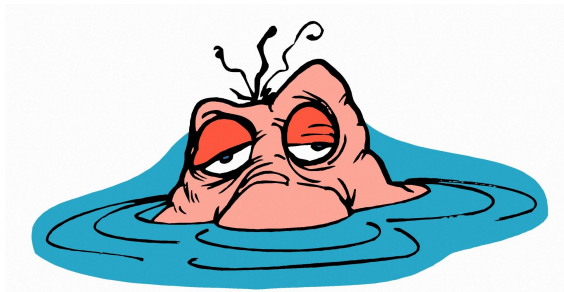


Modern Experimentation Culture

- Foundation of a data-driven culture
- Experimentation as an engineering tool
- Longitudinal and complex effects
- Pragmatic, responsive, and trustworthy

Stats Engines Don't Build Culture

What everyone worries about



Bad stats engine

Bayesian vs Frequentist
Fixed Horizon vs Sequential Tests
Z tests vs Chi squared tests vs...

VS

What actually causes failure

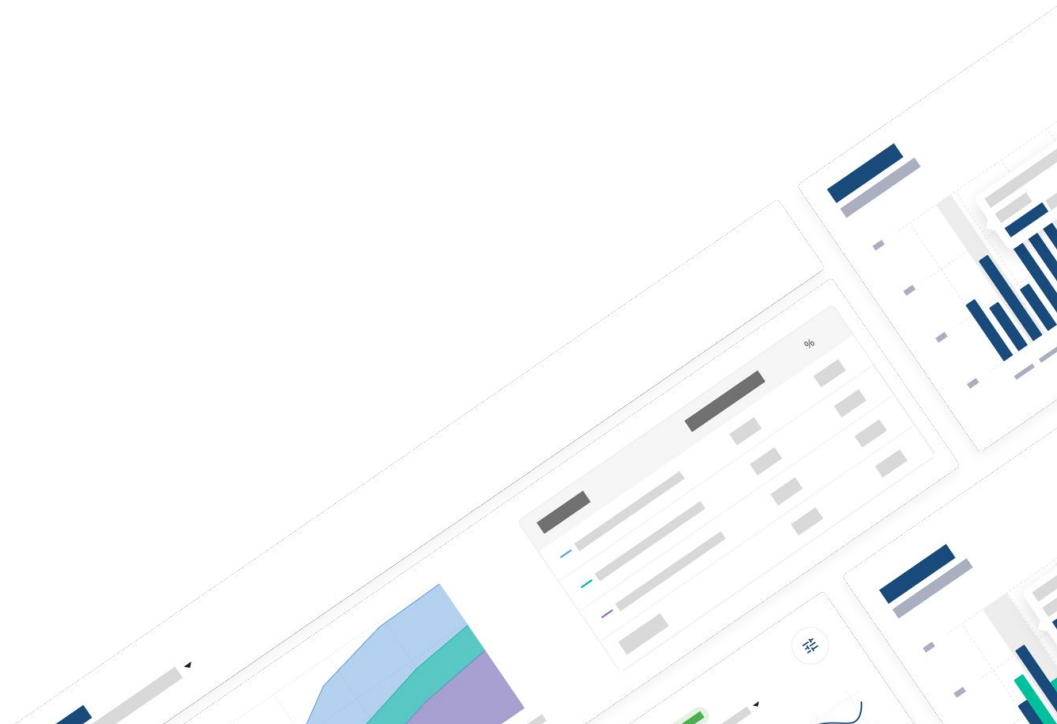


Poor experimentation culture

of experiments
Setting goals, picking metrics
Scientific method: review and critique
Democratized data literacy

Experimentation Best Practices

- Make testing easy
- Self-serve and democratized
- Standardized methodology
- Overlapping experiments
- You don't need millions of users
- Holdouts



Progressive Disclosure of Complexity

Scorecard Metrics

Experiment result for your primary and secondary metrics

As of 3/3 PST ⓘ

Rounded square ▼

VS

Circle ▼

SELECT

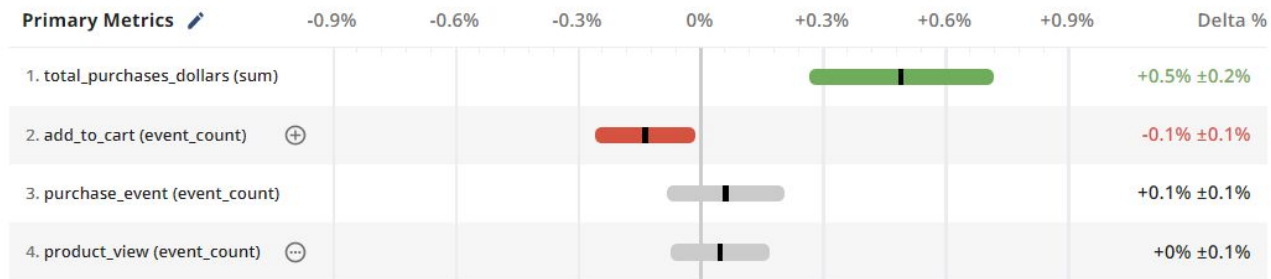
None ▼

1/13/2022 - 3/3/2023 ▼

Confidence Interval: 95% | CUPED: Yes | Sequential Testing: No ✎ Edit



Primary Metrics ✎

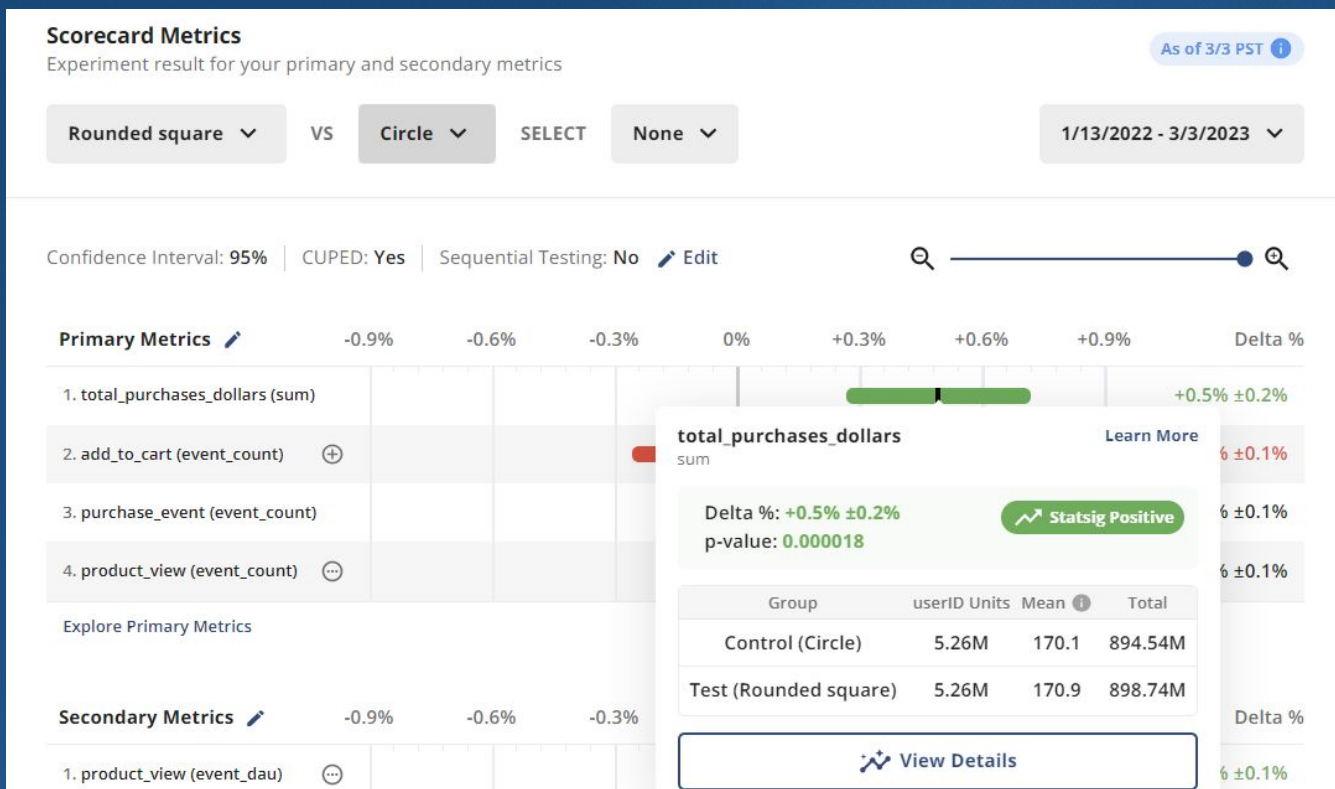


Explore Primary Metrics

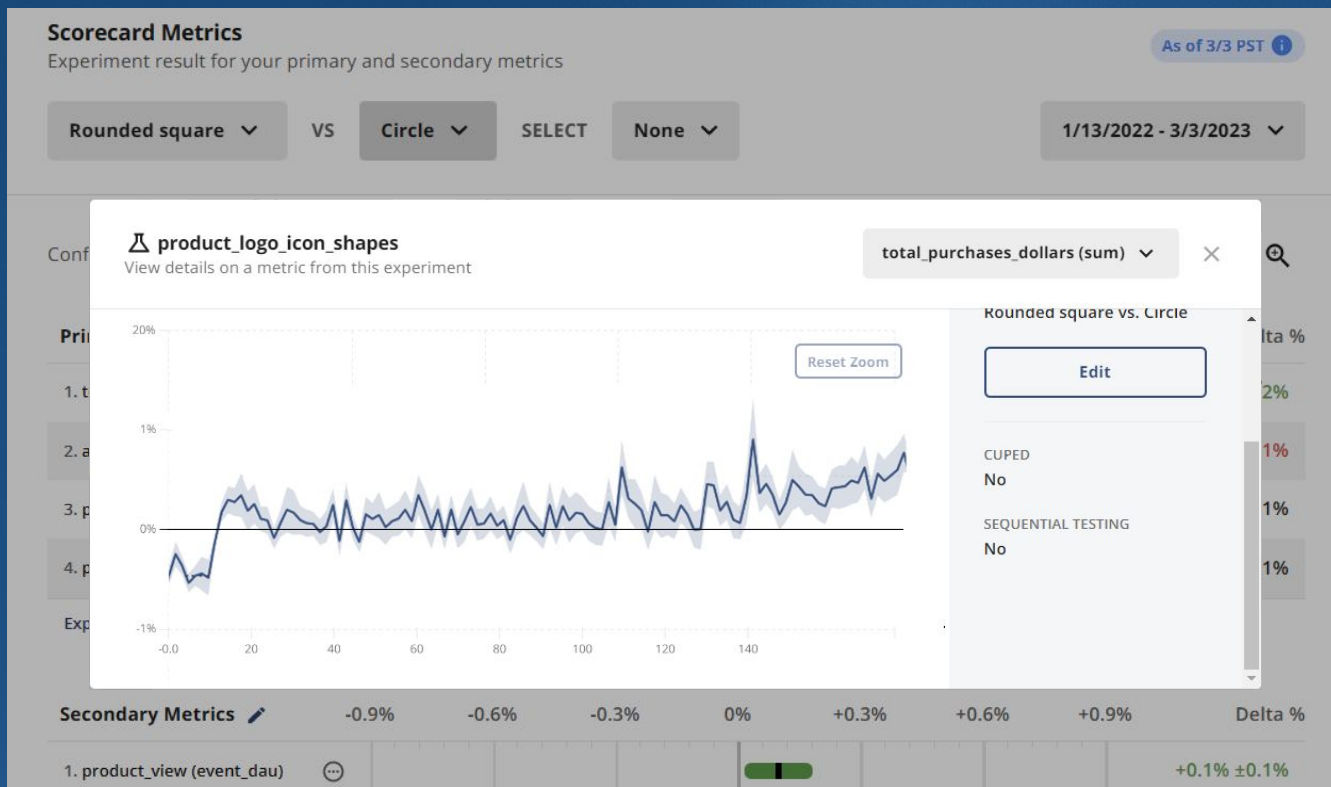
Secondary Metrics ✎



Progressive Disclosure of Complexity



Progressive Disclosure of Complexity





Lessons Learned

- Build quickly
- Customer-focused
- Data Science thought-leadership
- Data Engineering scalability



Thank you

tim@statsig.com
[linkedin.com/in/trchan](https://www.linkedin.com/in/trchan)