

Scaling Experimentation to 20 Billion Users



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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.

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Rapid growth

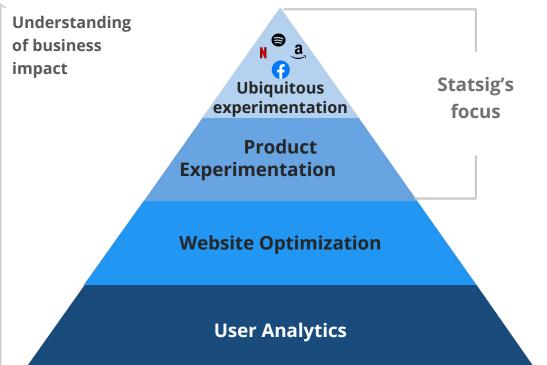
Serving results for thousands of experiments and insights across billions of users (unique identifiers).



Key Customers

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

Product Analytics Hierarchy of Needs



Fast, learning org; *every* feature ships as an experiment

Holistic picture including longer-term metrics

Focus on optimizing tactical metrics (often just conversion)

Visibility into KPIs

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

VS

What everyone worries about



What actually causes failure



Bad stats engine

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

Poor experimentation culture

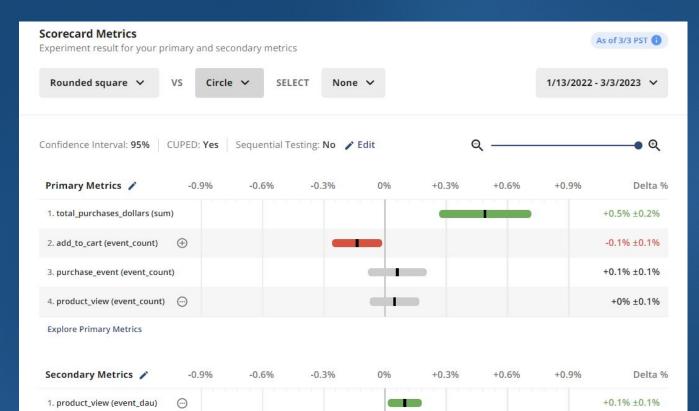
of experiments Setting goals, picking metrics Scientific method: review and critique Democratized data literacy

Experimentation Best Practices

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

ACCESSIBLE STATISTICS

Progressive Disclosure of Complexity



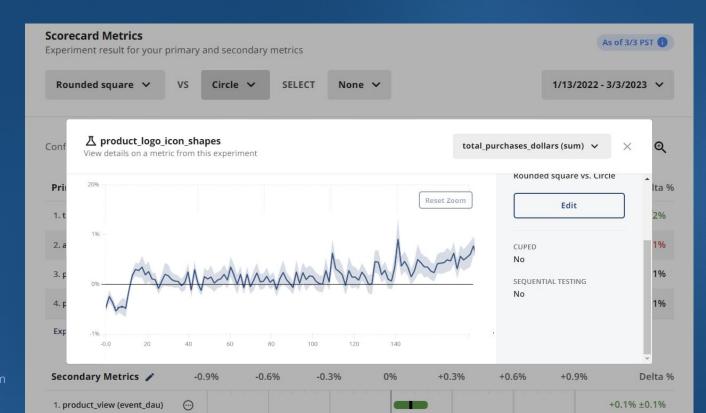
ACCESSIBLE STATISTICS

Progressive Disclosure of Complexity

Scorecard Metrics Experiment result for your primary and secondary metrics	As of 3/3 PST 🚯
Rounded square VS Circle V SELECT No.	ne 🗸 1/13/2022 - 3/3/2023 🗸
Confidence Interval: 95% CUPED: Yes Sequential Testing: No	✓ Edit Q● Q
Primary Metrics -0.9% -0.6% -0.3%	0% +0.3% +0.6% +0.9% Delta %
1. total_purchases_dollars (sum)	+0.5% ±0.2%
2. add_to_cart (event_count) ①	total_purchases_dollars Learn More sum 6 ±0.1%
3. purchase_event (event_count)	Delta %: +0.5% ±0.2%
4. product_view (event_count)	p-value: 0.000018 6 ±0.1%
Curley Drivery Making	Group userID Units Mean 🕕 Total
Explore Primary Metrics	Control (Circle) 5.26M 170.1 894.54M
Secondary Metrics 🖍 -0.9% -0.6% -0.3%	Test (Rounded square) 5.26M 170.9 898.74M Delta %
1. product_view (event_dau) 💮	View Details 6 ±0.1%

ACCESSIBLE STATISTICS

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Lessons Learned

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



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