

Online Advertising Incrementality Testing

Industry Practical Lessons And Emerging Challenges

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Who we are ...



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Tutorial Parts

1. The basics: context and challenges
2. Incrementality Testing: concepts, solutions and literature
3. From concept to production: platform building, challenges, case studies
4. Deployment at Scale: test cycle and case studies
5. Emerging trends: identity challenges, industry trends and solutions

Part 1

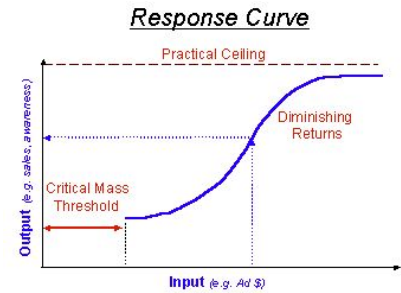
The basics: context and challenges

Context: Business Need

Kireyev et al. (2016), Li and Kannan (2014)

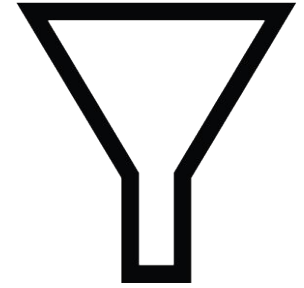
Why we need to run incrementality tests

1. Measure channel spend effectiveness for **optimal budget allocation** and planning.
 - Channels are often **marketing specific media**, eg social, paid search, programmatic display, TV, radio, etc
2. Calibrate **Media Mix Models** to estimate the channel response curve at different spend levels
 - *Media Mix Models* are often **financial time-series based models** that predict aggregate marketing spend performance in yearly/quarterly planning



Context: Business Need

Kireyev et al. (2016), Li and Kannan (2014)



As a result, tests are often run at channel aggregate level

1. Channel level requires **all advertiser spend** aggregated over weeks (even months) of testing
 - Results often inform quarter budget allocations with a measure of lift and efficiency, e.g., **cost per incremental conversion (CPIA)**
2. **CPIA** provides a **reliable comparison with other channels** regardless of the channel in the funnel
 - A standard challenge with spend planning based on last-touch attribution is the **highly imbalanced conversion rates between demand-capture and demand generation channels**

Context: Business Demand for Testing

Chan et al. (2010), Gordon et al. (2019)

Why testing when we have numerous causal inference frameworks?

1. Because observational studies without deliberate interventions often **greatly overestimate** the value of online ads
 - Even in the **presence of rich confounding features**, *Gordon et al* could not **replicate experiment** results in a large number of tests and with multiple causal inference techniques
2. Running **randomized controlled experiments** is the gold standard in marketing incrementality measurement.
 - A widely accepted notion in the online advertising industry

Context: Business Use Cases

Barajas and Bhamidipati (2021)

Typical use cases for online advertising vendors

- **New advertiser** wants to *test waters* before fully deploying budgets
 - Generating trust, a successful test leads to **incremental revenue** for the ad network
- Existing advertiser wants to **scientifically prove incremental value**
 - Regular incrementality tests to **assess the strategy**, from advertiser's conversion metric definitions to provide certainty of the current budgets

Context: Business Use Cases

Barajas and Bhamidipati (2021)

Typical use cases for online advertising vendors

- Incrementality of **tactical practices** with external validity for future deployment
 - Examples include: **CRM vs new customers, prospective vs remarketing**, etc
- Quarterly regular **strategic adjustments** (retrospectively)
 - From test insights, **targeting and optimization recommendations** to improve incremental value

Testing in a Nutshell

Why incrementality testing is hard?

Incrementality Testing in a Nutshell

Goal:

Find Aggregate Effect of Marketing Spend

Randomized unit:

Users (our best notion)

Intervention:

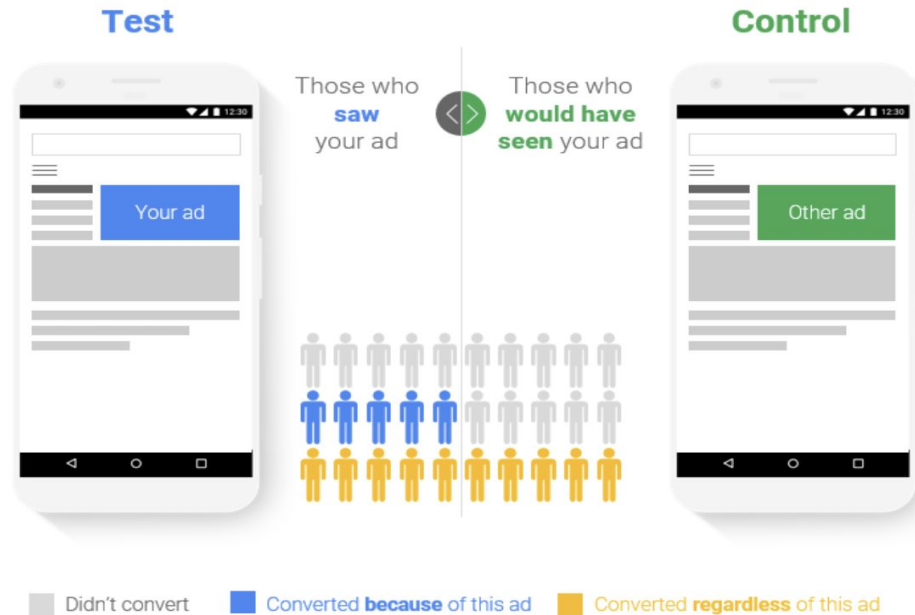
Marketing Spend leading to ad delivery

Control:

No marketing ads

Metrics:

Converter Lifts, Cost per incremental converter/conversions, among others



**If this is *just* an A/B test,
why do we need more?**

**We'll review in next part of the
tutorial....**

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