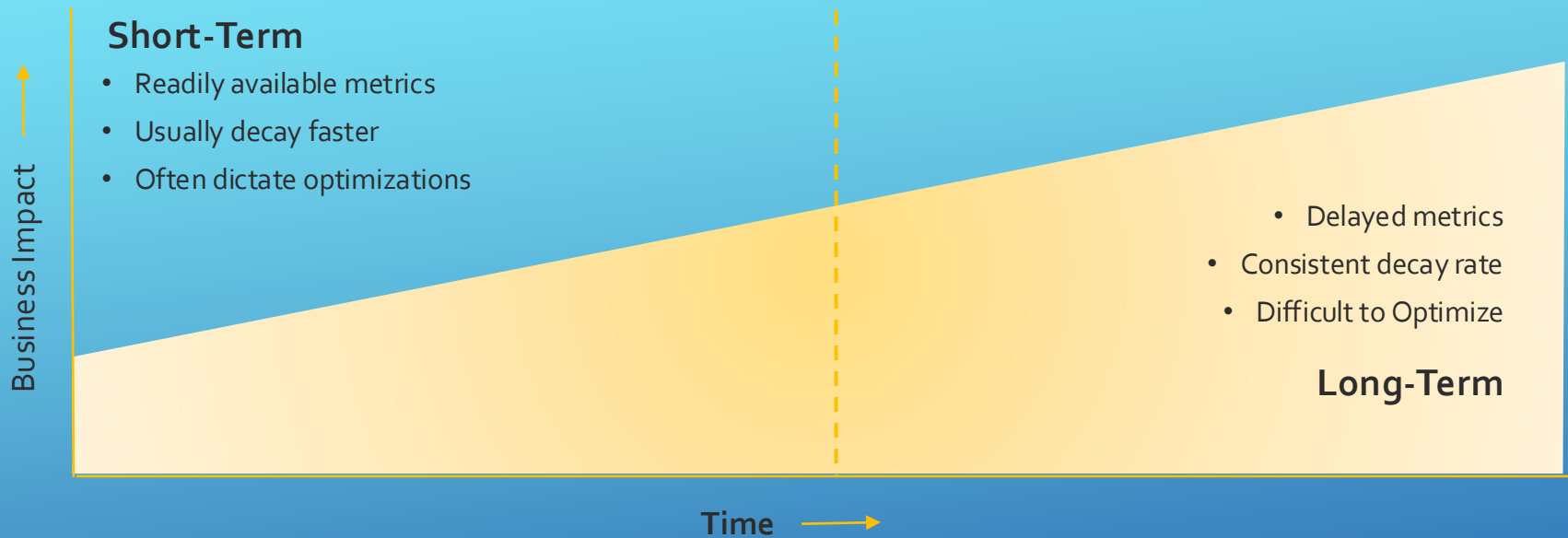


HOW AI IS RESHAPING MARKETING ANALYTICS

Richard Qiao

THE CORE TENSION: SPEED VS TRUTH



EVOLUTION OF MARKETING ANALYTICS



Traditional analytics:

Static models, retrospective reporting, and slow learning cycles



Experimentation era:

RCTs become the gold standard, but still slow, expensive and fragile



AI era:

So what shall we do now?

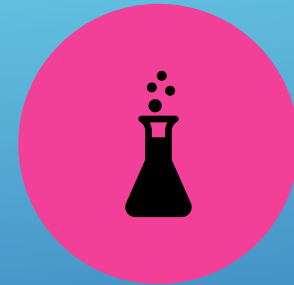
1. EXPERIMENTATION STILL MATTERS



RCTS REMAIN THE CAUSAL
FOUNDATION



CHALLENGES STILL EXIST:
NOVELTY, INTERFERENCE,
CARRYOVER

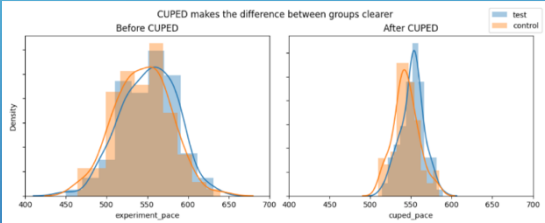


AI AUGMENTS
EXPERIMENTATION, NOT
REPLACES IT

AI-ENHANCED EXPERIMENTATION



Smarter test design and variance reduction



Source: CUPED by Statsig



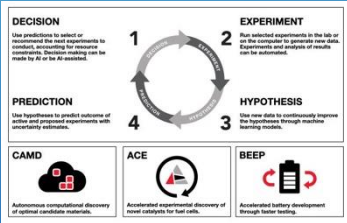
Adaptive stopping and faster learning



Source: Ax



Closed-loop experimentation systems

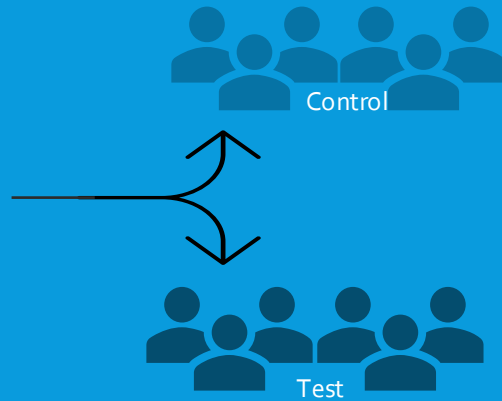


Source: Toyota Research Institute

CLASSIC EXPERIMENTS TO AI DECISIONING

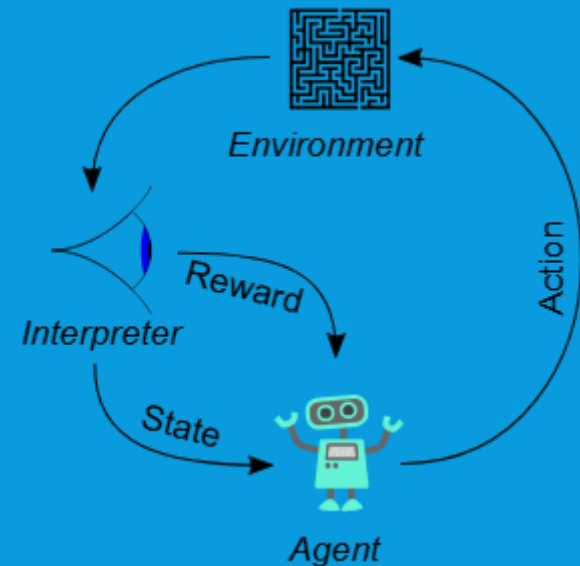
Manual Experimentations

| |
|------------------|
| Platform |
| Time |
| Location |
| Creative Version |
| Audience |



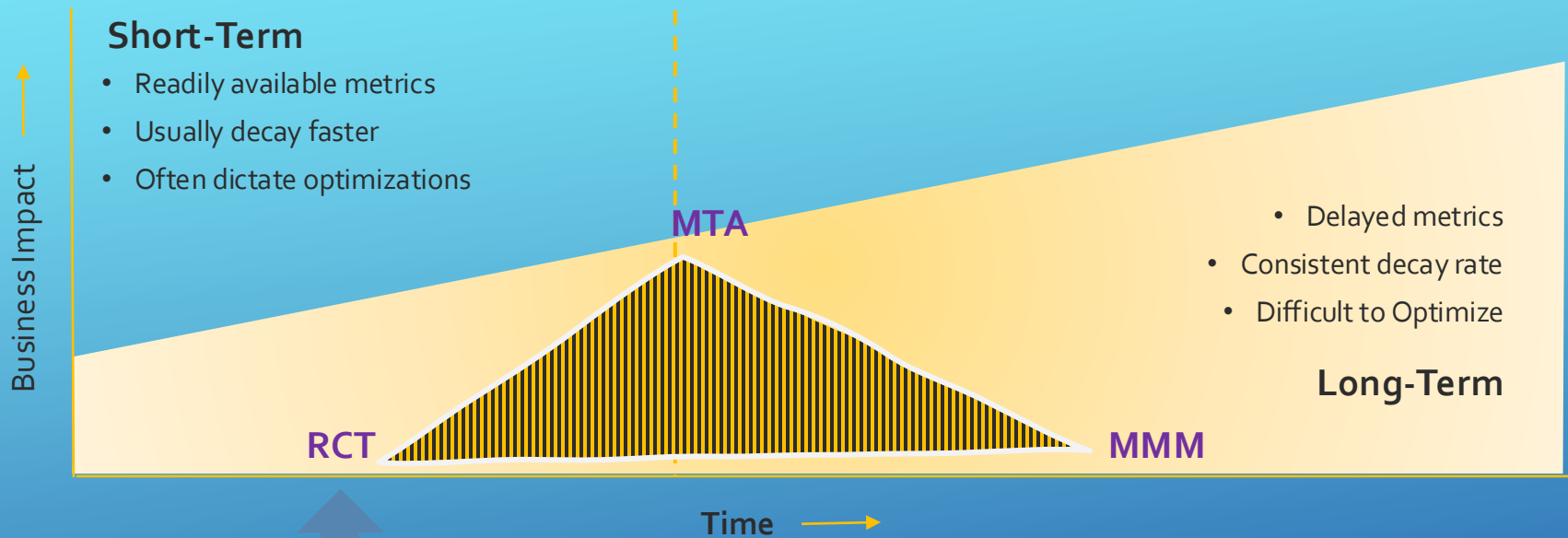
- KPI overload: infinite combinations
- Slow feedback loop = slow decisions

With AI (Reinforcement Learning)



- Parallel experimentation at scale
- Rapid learn-and-improve cycles

2. ATTRIBUTION STILL WORKS



What if RCT isn't possible or we don't know what to test ?

FROM MEASUREMENT TO PREDICTION



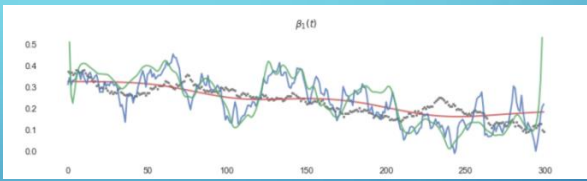
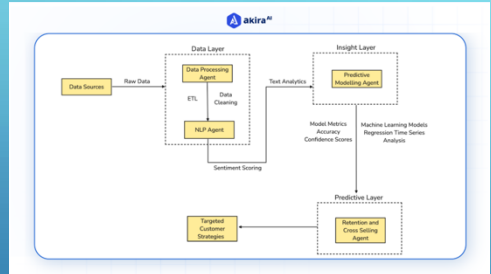
Predict delayed outcomes like brand and LTV



Time-varying coefficients reflect markets



Forecasting becomes core analytics output



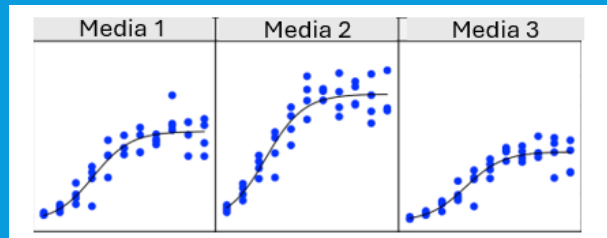
Use Case 1

Source: Akira AI

Source: [Bayesian Time Varying Coefficient Model with Applications to Marketing Mix Modeling](#)

USE CASE 1: AI TO THE RESCUE: FASTER INSIGHTS VIA PREDICTIVE MODELING

The Measurement Dilemma
How do we convert early signals into long-term gains?



$$Conversions_{MTA} \propto \sum f(\text{fixed} + s(\text{Early Indicator Variables})) + RE(\text{Media}) + AR$$

3. GENERATIVE AI EXPANDS DECISION INPUTS

LLMS FOR MARKET
RESEARCH
SYNTHESIS

SYNTHETIC DATA
AND SIMULATED
CUSTOMERS

AI-ENABLED
CREATIVE
EXPERIMENTATION

SUMMARY: WHAT DOESN'T CHANGE AND WHAT CHANGES

CAUSALITY
STILL MATTERS

ATTRIBUTION
STILL WORKS

AI EXPANDS
DECISION
INPUTS

Static Measurement



Adaptive Intelligence

One off Test



Continuous Learning

Set Up Metrics



AI Decisioning

NEW ROLES OF MARKETING ANALYTICS TEAMS



From reporting to building adaptive learning systems;
From sequential tests to always-on optimization



Build collective intelligence and focus on decision quality and speed



Governance and judgment matter more

CLOSING QUESTION

How much decision-making should we trust AI with?

