

# MMM & Buyer-Optimized Measurement



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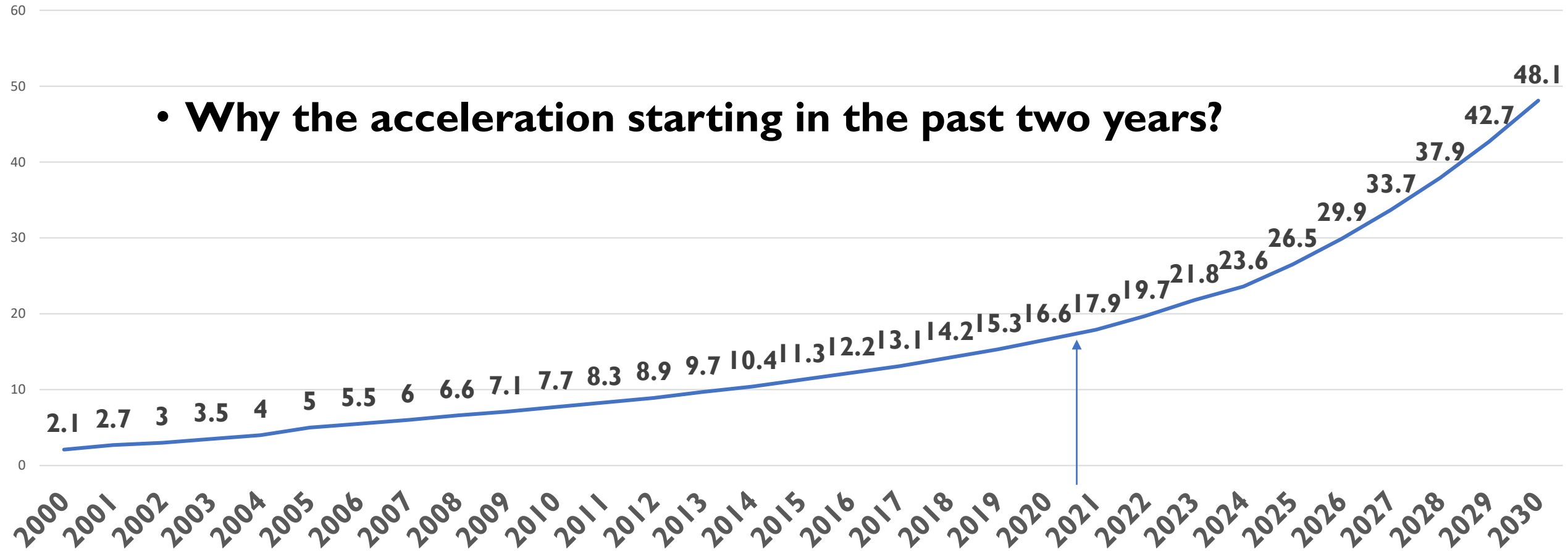
BILL HARVEY



CORPORATION

# MMM Global Revenue Estimates

\$BILLIONS



Sources: MSI, Honimichl, Statista, BHC Estimates

# Causes of the MMM Renaissance

- Sped up MMM by Cadence
- Plausibility by Bayesian Priors
- One View of Reality Across Co.
- Confidence in Co.'s Own Data
- Brand Lift Studies Too Positive
- MTA almost always left out TV
- Fear of Privacy ID Deprecation
- ID Graphs Half Accurate
- Improvements in MMM using AI
- Hybrid MMM+SingleSource

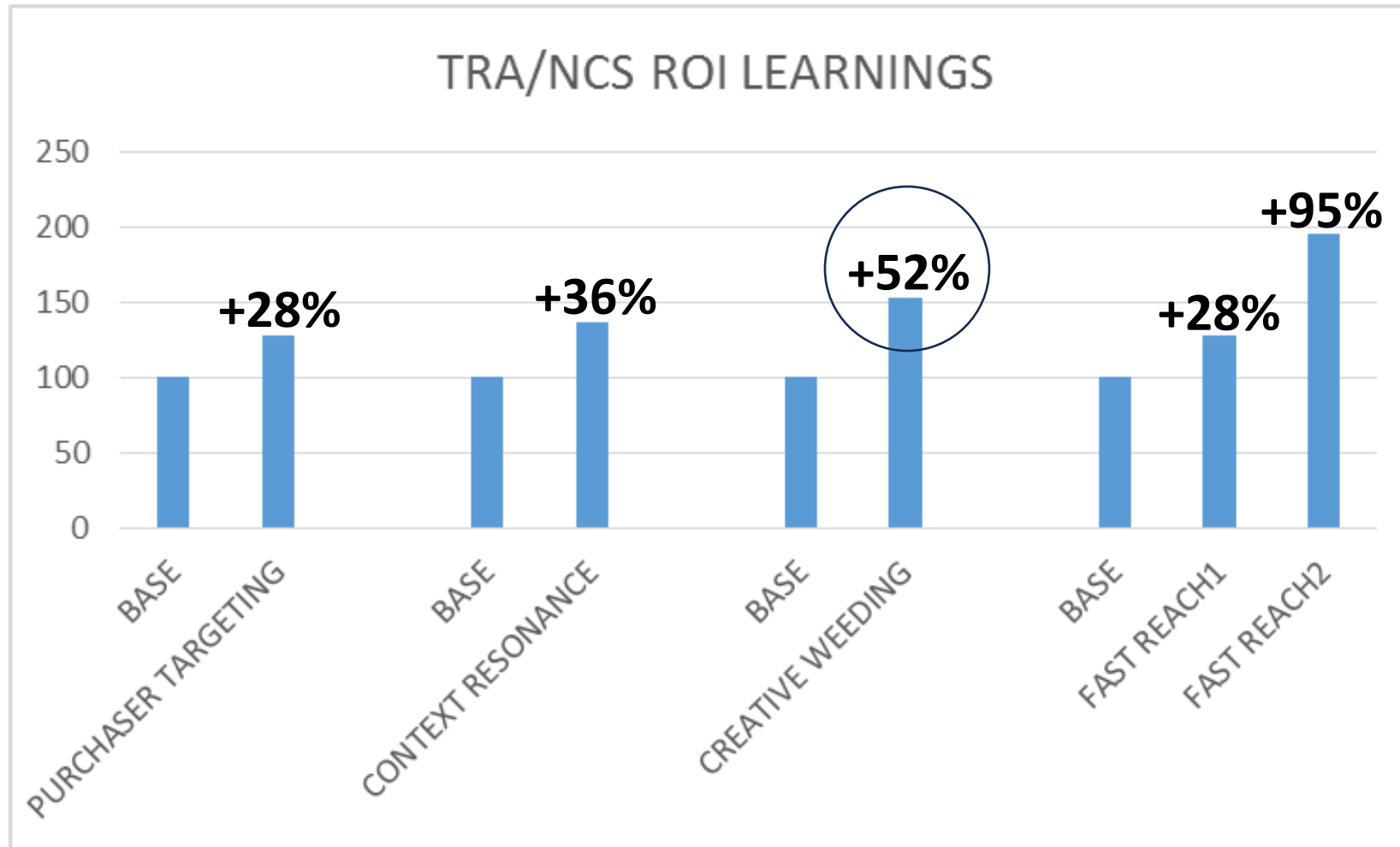
**What Have We Learned?**

# What Buy and Sell Side Both Need

- Reasonable certainty about what a specific activation will deliver
  - Too infrequently is MMM used with consideration of saturation effects
- Speed sufficient for in-flight re-optimization of all activations incl. TV
  - Marketers are finding ways to speed up MMM
- Inclusion of full funnel branding effects, long term as well as short term
- Inclusion of Creative in MMM

# Why The Need for Speedy Inflight Re-Optimization

+52% average increase in ROAS when you can weed out dud creatives early



# Use RCTs to Optimize Synthetic Controls

How to be sure synthetic controls make treatment and control groups as if perfectly matched as in an RCT: Use RCTs for calibration. This may cause suppliers to change their models, adding or eliminating variables they use in making the unexposed group look like the exposed group, or changing the weighting of these variables.



**In the scenario recommended in this report**

**The current method is to weight the Unexposed group to make it look like the Exposed group in the hope that this will give results as close as possible to a true RCT. Suppliers use different variables. Some like Nielsen and 605 use previous purchase behavior, demographics, viewing patterns.**

**Experience shows that even changing the age groups from less to more granular changes the results. With vs. without one of the above variables changes the results. Which result is more accurate? How can you tell without RCTs?**



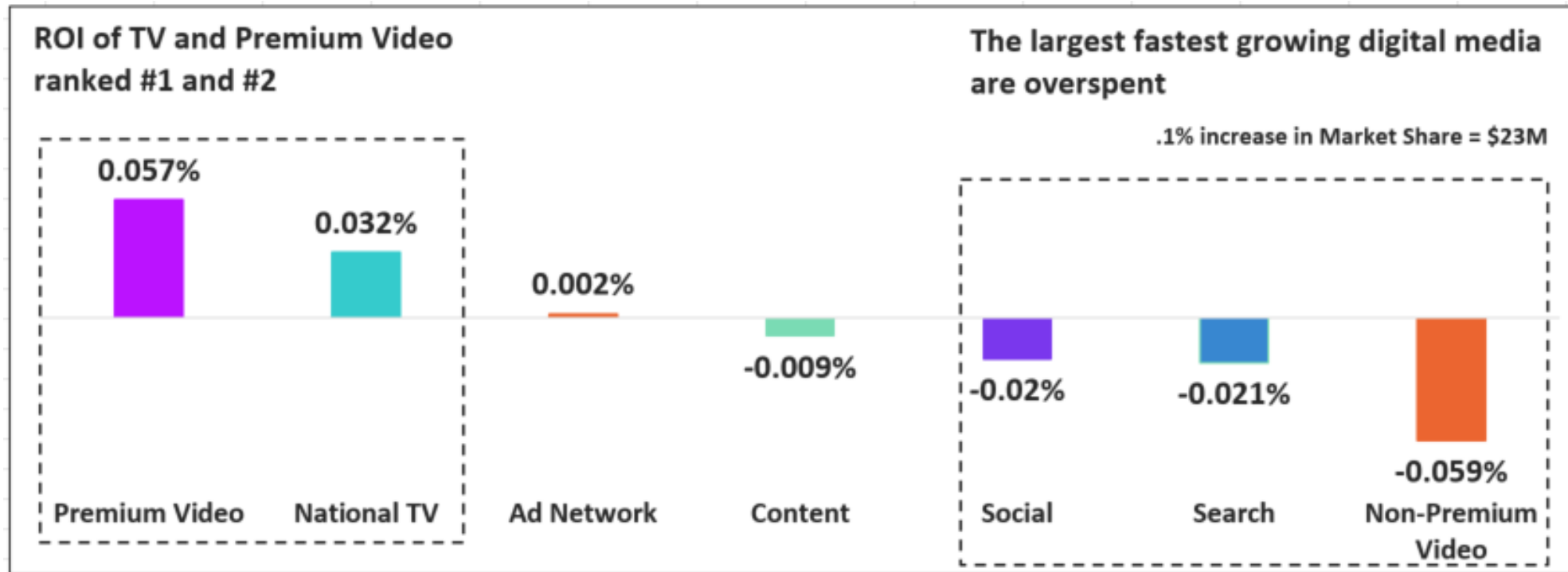
**AI can be used to do this always on**

Source: FOX BHC MMM of \$3 trillion in sales vs. \$48 billion in ad spend

U.S.: CPG CIRCANA IRI, AUTO S&P POLK, QSR CIRCANA NPD CREST, AD SPEND STANDARD MEDIA INDEX

# Marginal Utility Analysis indicates Non-Premium Digital Media Saturated

All Brands Combined – CPG, Auto, QSR





# ROSS LINK'S MARKETING ATTRIBUTION USES NIELSEN REACH CURVES TO REFLECT SATURATION BY MEDIA TYPE

We helped pioneer marketing mix modeling as Marketing Analytics Inc.

Developed the first *automated* MMM system *Coefficient Generator™*

Developed the first MMM tracking system *Drivers on Demand™* in an 8-year partnership with IRI

Led the pioneering Digital Media Consortium, improving industry best practices in partnership with Google, Facebook and leading CPG firms

Brought many of the most important techniques to the industry, including Bayesian modeling and reach / effective frequency based saturation



## MMM TESTS, DMC1 2013

The diagram illustrates the Marketing Effectiveness Analysis process. It is divided into three main sections: Publishers, Advertisers, and Marketing Effectiveness Analysis. Publishers listed include Facebook, Google, and OCR. Advertisers listed include Kellogg's, Kimberly-Clark, Kraft Foods, Mondelez International, Nestle, P&G, and Unilever. The Marketing Effectiveness Analysis section includes icons for store level, 132 MMMs, 14 brands, and network analysis. It also lists various tests and varieties, such as Google Paid Search, Facebook, Synthetic Data Tests, Catalina, Network Analysis, and Fit and Holdout Assessment. A table at the bottom lists test varieties and their corresponding metrics.

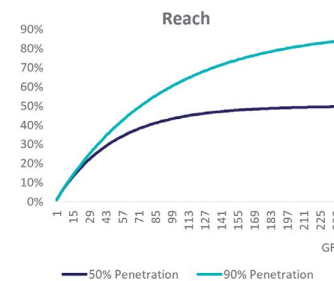
Test	Varieties
Geography	National, DMA
Platform	Desktop, Mobile, Tablet, Combined
Gender	Female, Male, Combined
Metric	Impressions, Reach, Clicks, Ad Position

Outcomes are categorized into Accuracy, Methodology, and Efficiency.

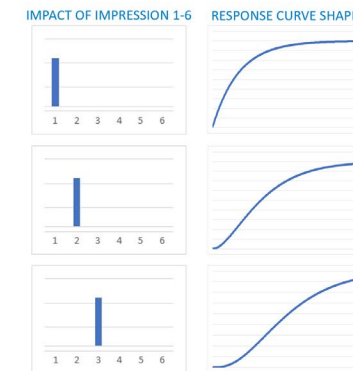
- Accuracy:** Proven Metrics, Thresholds for campaign design
- Methodology:** Reach and Frequency, Measurement of direct + indirect effects
- Efficiency:** Better Data, Standardized Formats and Process

Source: Nielsen

## ACCOUNTS FOR REACH AND EFFECTIVE FREQUENCY



- Use knowledge of reach / penetration by media channel to ensure sales response curves flatten where they should

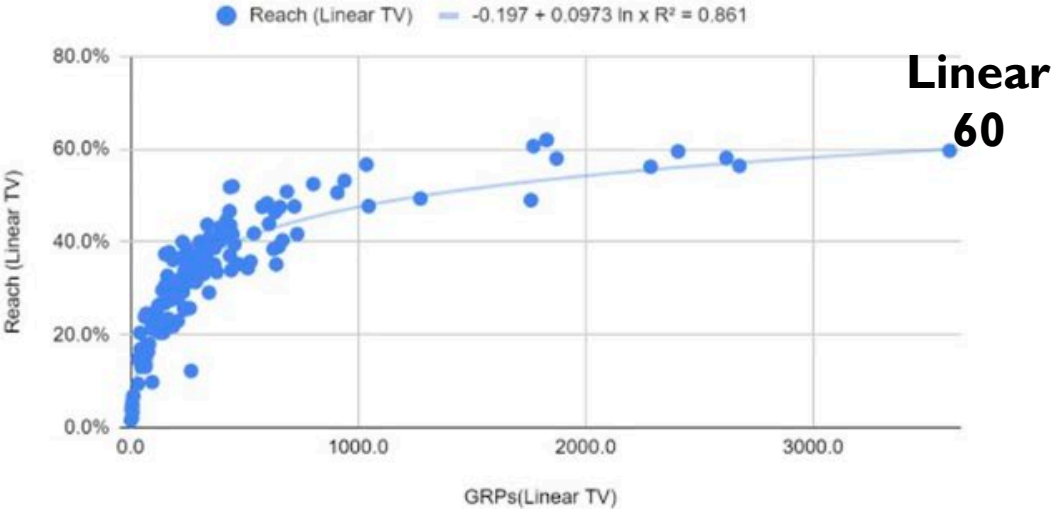


- Tie shape of response curve to effective frequency

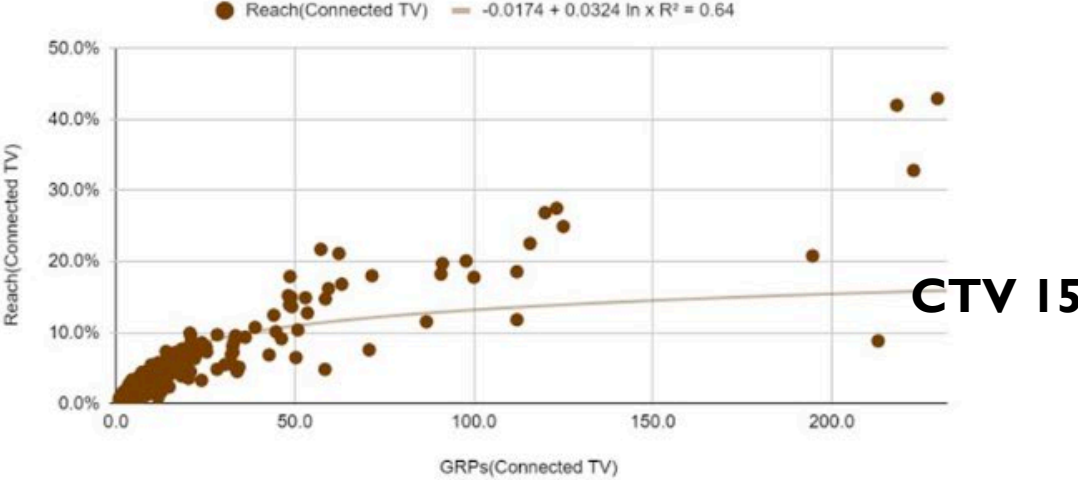
US 20140278930A1: "Methods and apparatus to incorporate saturation effects into marketing mix models", by Ross Link and Nathan Brixius

# Nielsen ONE Ads shows Reach Saturations by Media Type

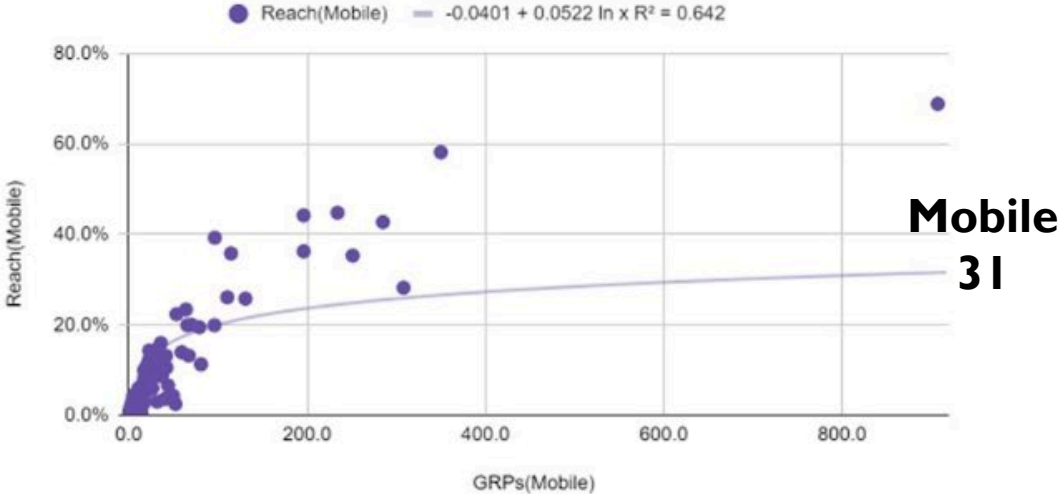
GRPs vs Reach for Linear TV Campaigns



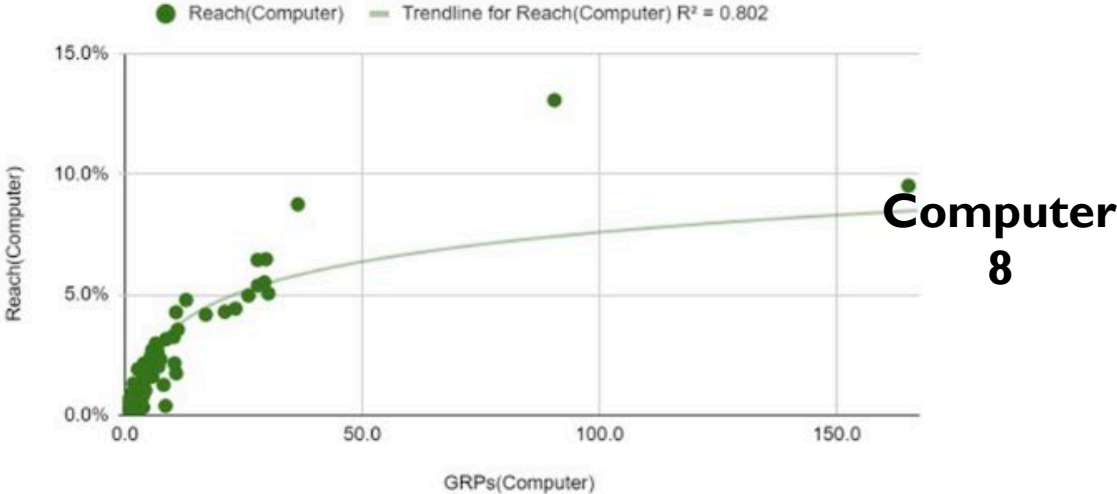
GRPs vs Reach for Connected TV Campaigns



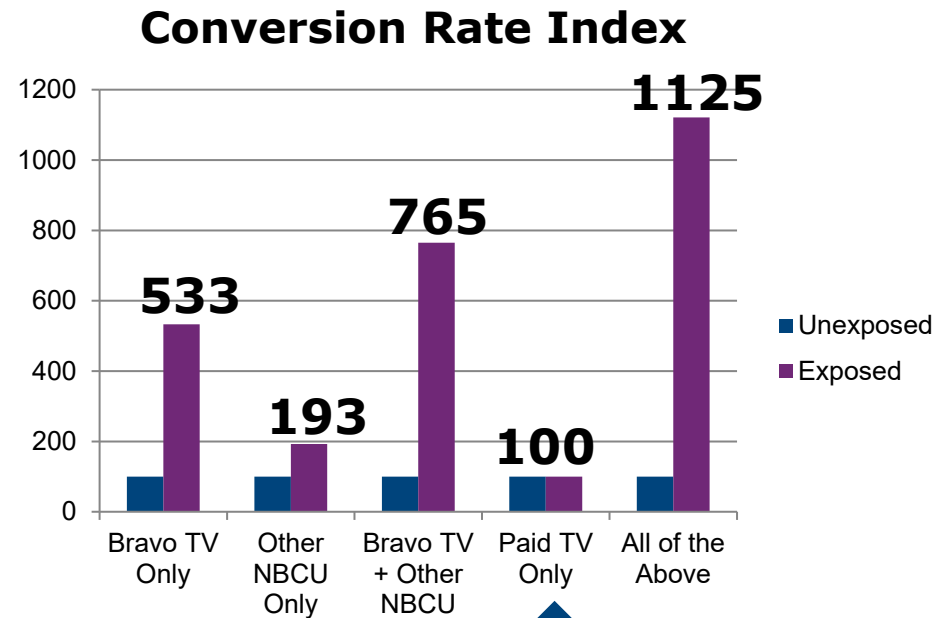
GRPs vs Reach for Mobile Campaigns



GRPs vs Reach for Computer Campaigns



# Synergy: Paid National ads had no effect on their own, but when added to NBCU Air, they increased conversion +47%

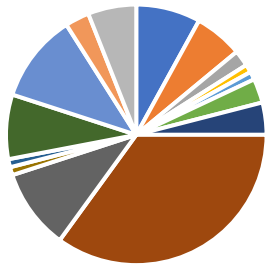


Source: TiVo Research (TRA)

# Why Use More Than One ROI/ROAS Method?

The future: integration of MMM, singlesource, and experiments

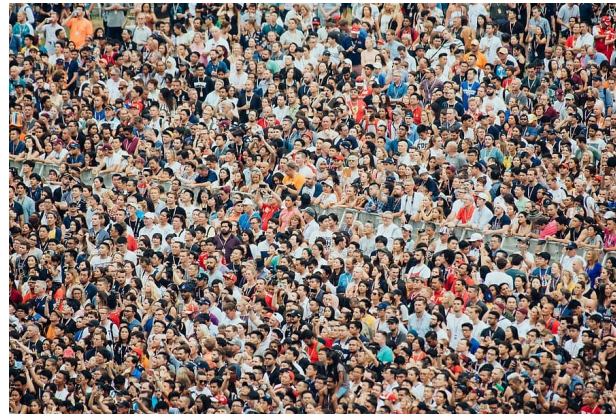
## MMM % of Incremental Sales



- Creative
- Digital Video
- Social
- Content
- Promotion
- Weather
- Innovation
- TV incl Dig
- Digital Display
- Search
- Price
- Experiential
- Competition
- Distribution



## Singlesource



Adds granularity, branding, targeting, journey/sequence, timing, frequency, recency, “WHY” insights, tactical actionability; conforms to MMM

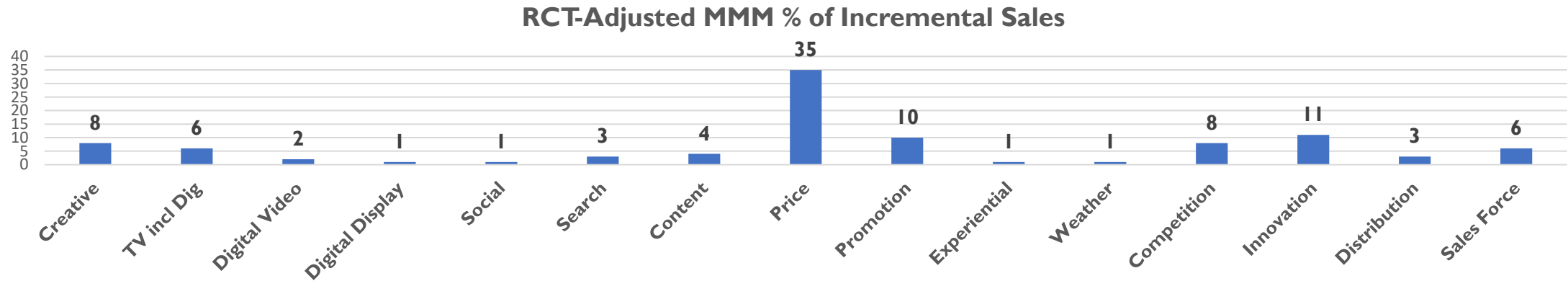


## Experiments



Provides greater certainty for investment decisions, may adjust MMM and Singlesource; includes Random Control Trials, Matched Market Trials, Matched Store Panels, etc.

# How RCT-Grounded MMM Can Serve as a Framework in which RCT-Grounded Singlesource is Conformed to fit within MMM Frame



**RCT+MMM-Adjusted Singlesource**

**All creative executions within granular media subtypes add up to their respective MMM parent: for example, Facebook, Instagram, et al add back to the MMM coefficient for Social Media**

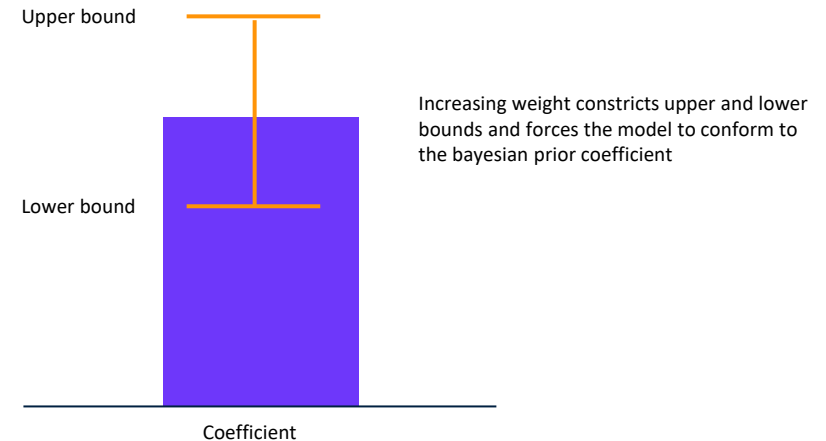
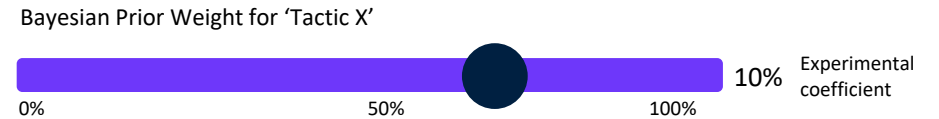
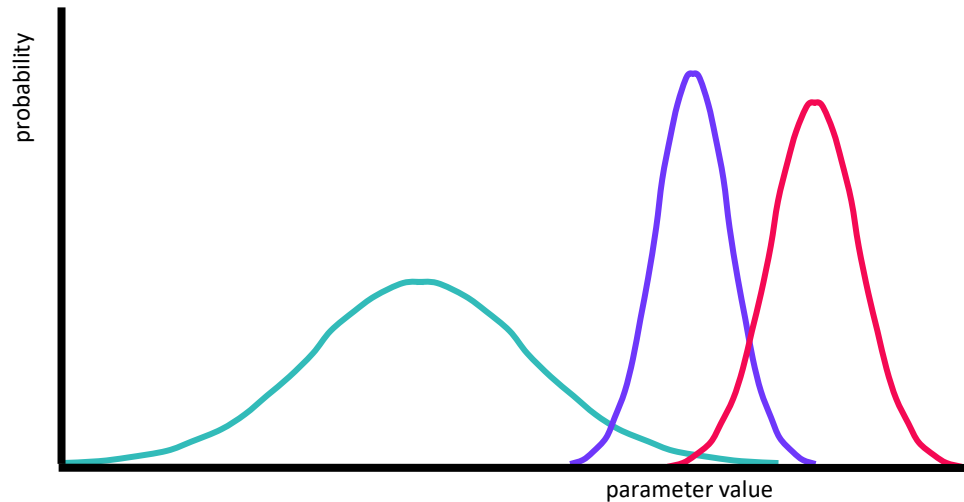
# The Process: Using experiments to **inform** MMM results.

## Bayesian MMM

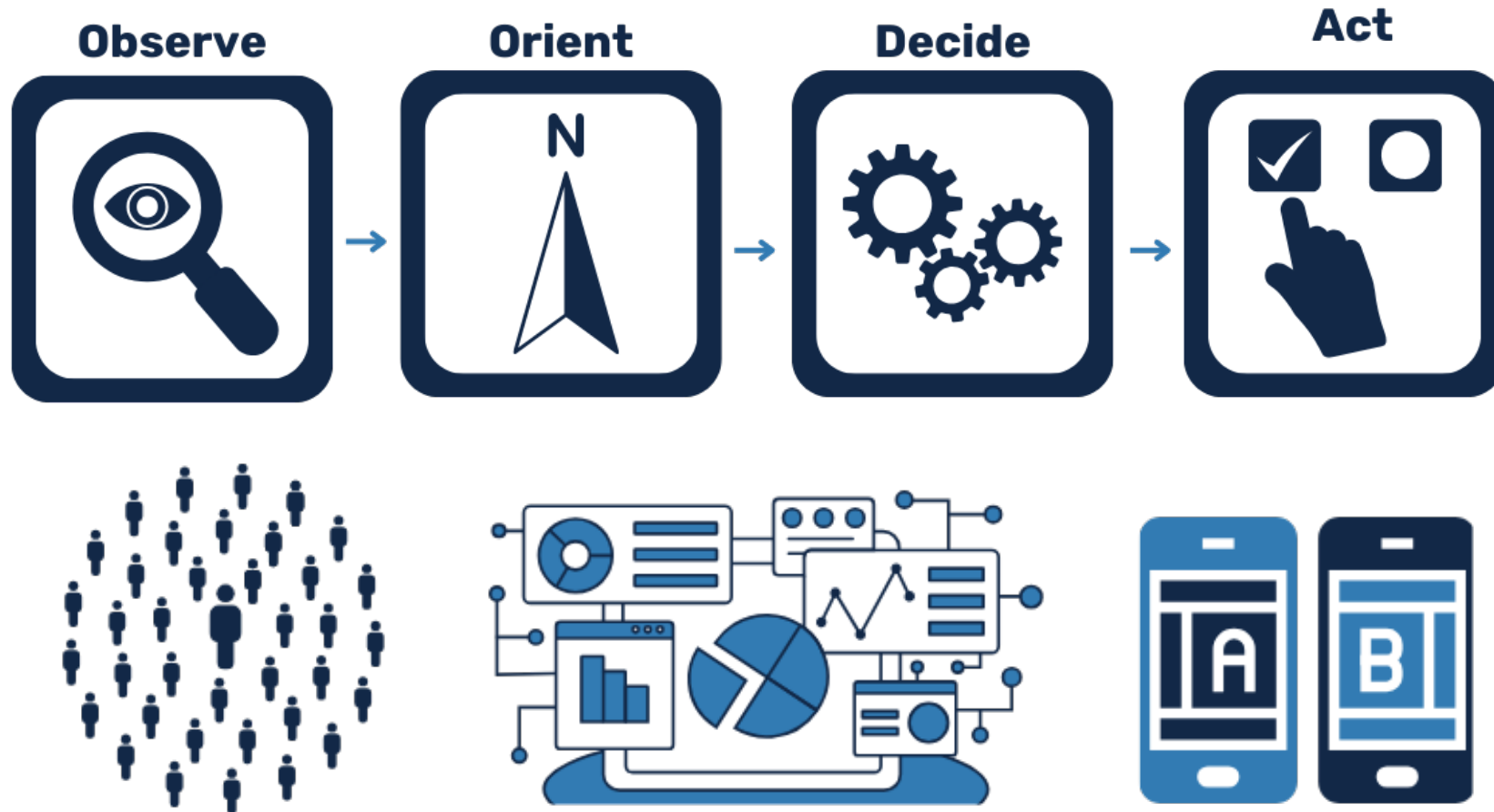
Most MMMs are built on a Bayesian framework, a statistical approach based on probabilities. The models **use a combination of prior beliefs and observed evidence** to estimate the final parameter value (e.g. a channel's effectiveness).

## Experimentation to inform Bayesian MMM

The source of those prior beliefs (aka Priors) is subjective, often grounded in previous model results. Controlled incrementality experiments prove causality and reduce subjectivity. Using them as the basis for Priors **leads to greater confidence in modeled results**



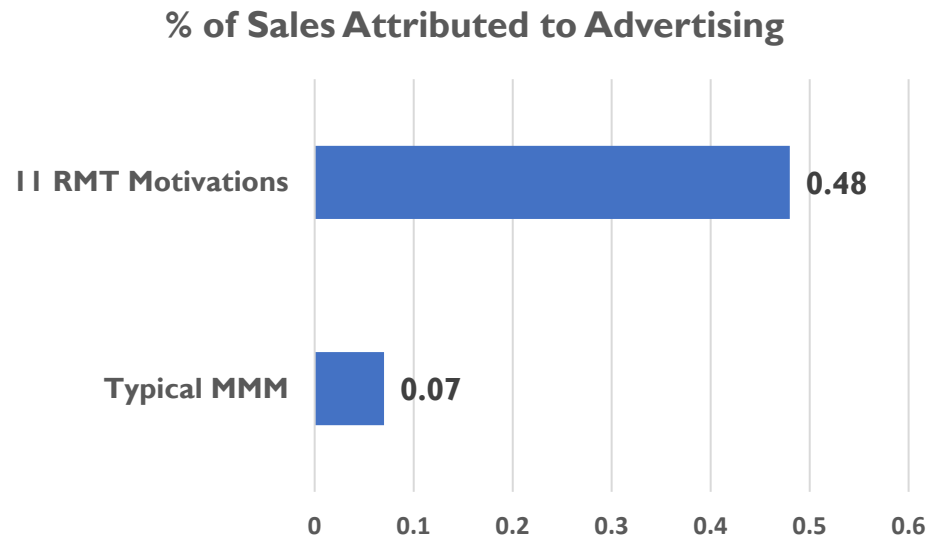
# Arimadata Self-Serve MMM Based on Simulated Population



Speed of One Advertiser Defined Audience from  
Business Modelling to Media Planning & Outcome Evaluation

# Promising Method for Inclusion of Creative in MMM

- ARF Cognition Council study using content coding found that Creative accounts for 48% of brand sales
  - Interesting in light of MMM typically finding media accounting for only 7%



Variable Name	Pearson Correlation Coefficient	p-value
Wealth/Success	0.521	0
Laudatory Deference	0.516	0
Status/Prestige	0.51	0
Support Group	0.471	0.001
Service To Humanity/Self Transcendence/Enlightenment/ Spiritual Awakening	0.468	0.001
Positive/Ethical Command/Boss/Ruler	0.445	0.001
Helpful	0.438	0.002
Good Role Model	0.43	0.002
Aspiration	0.428	0.002

SOURCES: ARF, CIRCANA IRI, Kantar, RMT; 2016-2021 19 brands in 3 CPG product categories

<https://www.mediavillage.com/article/arf-cognition-council-analysis-finds-rmt-creative-codes-explain-48-of-sales/>



# CIMM Study of Latest ROI/ROAS Methods

## Ten Recommendations

1. Add Creative to MMM
2. Add Competition to MMM
3. Add Singlesource Conformed to MMM
4. Explore how to improve MMM accuracy using AI to analyze thousands of models
5. Use “Bank Account Validation”
6. Use experiments to validate MMM and Singlesource
7. Create AI-based Dashboards integrating ROI/ROAS and programmatic activation
8. Concentrate on MMM projected into the future rather than past
9. Integrate branding+ROI/ROAS
10. Media use clean rooms to support client ROI/ROAS

# Major Opportunities for TV Networks & MVPDs in ROI/ROAS

1. Leverage 100% ID Accuracy, Nonfraud, Viewable, and ROAS proof
2. Make it easier to do RCTs
3. Pool (one stop shop) Network, Streaming, Spot, and Cable Inventory & make it all Addressable & Programmatic
4. Lead Outcomes Measurement

**For the full report, request from CIMM “ROI & ROAS Sophistication Ascending”, by Bill Harvey and over 20 other ROI/ROAS experts**