



# A Theory of Everything for Unified Cross-Channel Impact Measurement: Operationalizing at Optus

October 29, 2020



# Implementing a Data Privacy Resilient, Cross Channel Impact Measurement Solution

October 29, 2020

# Outline

**Motivation:** The Biggest Threat to Cross-Channel Impact Measurement

**Coalition:** A Call for a Theory of Everything

**Solution:** What that Approach Looks like

**Implementation:** What does this operation look like at Optus

**Outcome:** How does it enable and ease dependable operation at Optus



# Motivations

# Biggest Threat to Cross-Channel

Highly correlated missing and included:

*Customers*



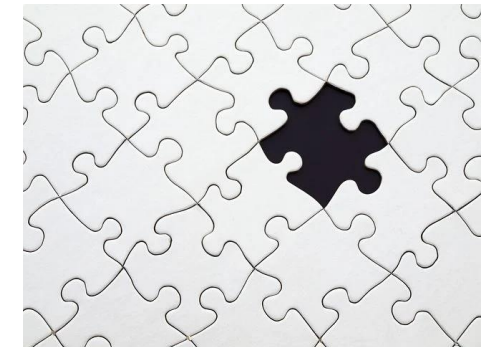
Under and Over  
represented customers

*Exposures*



Missing or incomplete  
understanding of  
exposure reach and  
frequency

*Behaviors*



Limited or missing  
picture of the distribution  
of customer response

# Specific Reasons

## Changes in Data Availability:

- Walled garden
- Privacy legislation
- Measurement Gaps



## Intentionally or Unintentionally Selective Identity Solutions:

- Opt-in, Opt-out, consumer use behaviors



## Intentionally or Unintentionally Targeted Exposure:

- High conversion probability Audience Selection (upward bias)
- Max Reach based planning (downward bias)



## Limited Scientific and Engineering Expertise:

- Use of preexisting tools
- Limited cross-discipline training in CS & Social/Psych./ Business Science



# The Wrong Solution

The sequential blend of analytic approaches that generate ***incomplete*** and ***biased*** impact measurement and activation





# Coalition



# Call for a Theory of Everything



An HBR Analytics Services article addresses, Reckoning Performance Marketing to Renew Brand Building

The article also cites a white paper by Google titled “Measuring Effectiveness - Three Grand Challenges”



In that white paper the authors call for.. a “theory of everything” One outcome would be “transparent models to blend data of different granularities (user, segment, geo, aggregated) to get consistent and holistic measures of effectiveness”

WFA “Established Principles for a new approach to cross-channel media measurement”... principles I argue require the theory



# WFA Principles

## Advertiser needs (‘North Star’)

### Full lifecycle measurement

Planning/Reporting/Optimisation

### Continuous

Tagless, always-on data capture

### Comprehensive

TV & digital (but not limited to video)

### Full-funnel

Outputs & outcomes measurement

## Industry requirements (Advertiser supported)

### Privacy-safe

Respect for consumer & no risk of re-identification

### Fair & objective metrics

Neutral service with metrics for comparability

### Trust & transparency

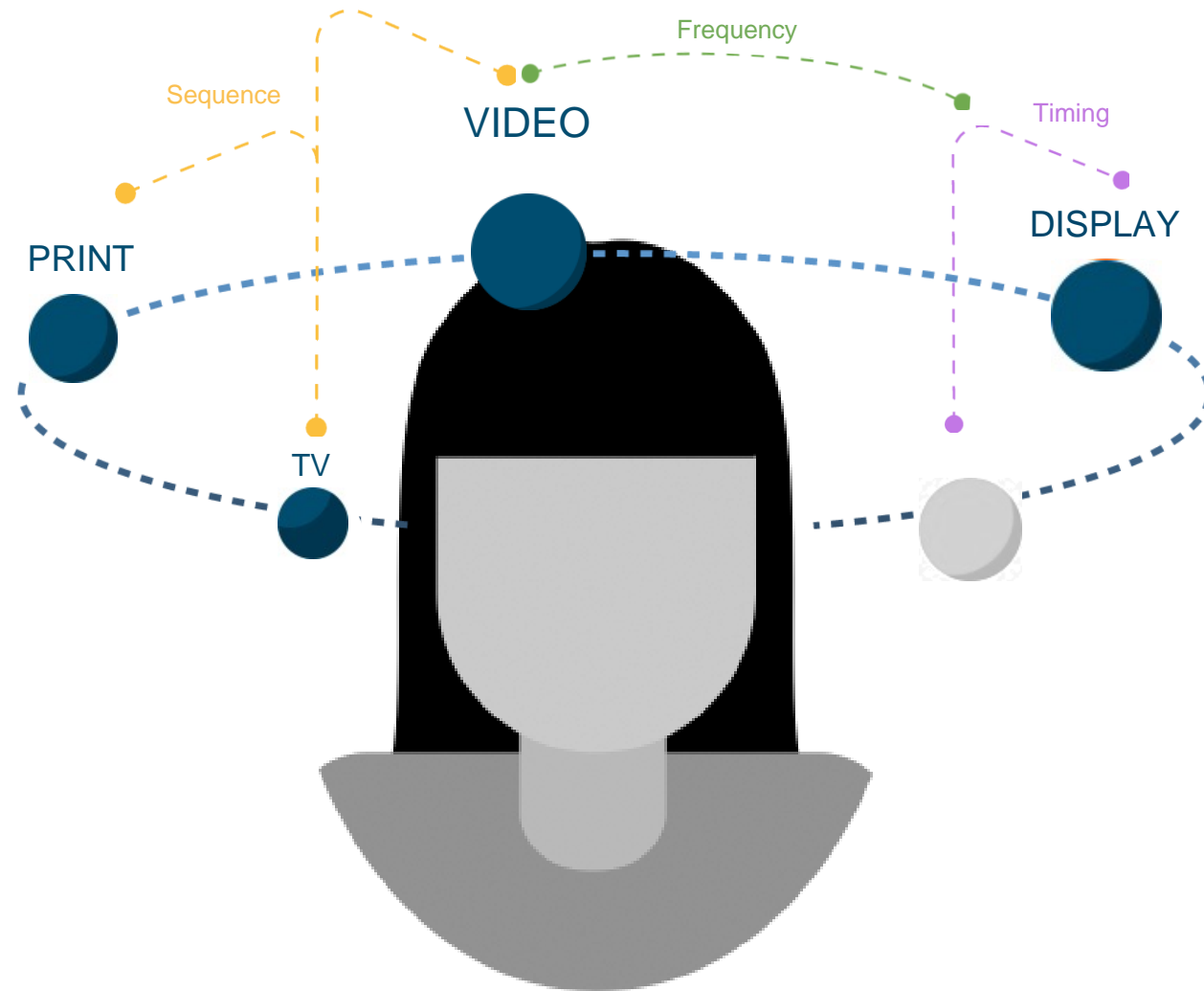
Enshrined through regular audits

### Advertising & content

Measuring ads and editorial context/content

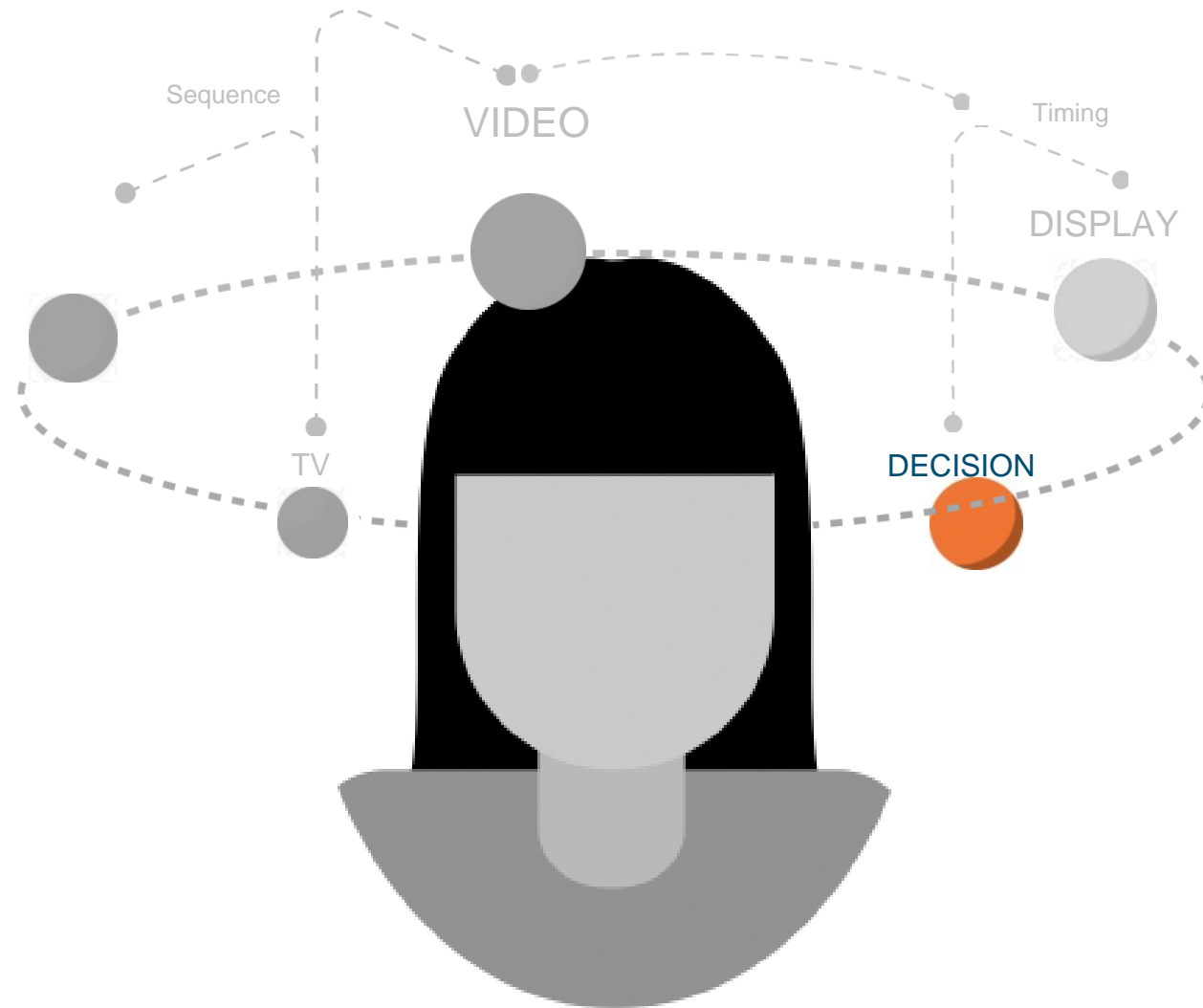
# Solution

# Exposure

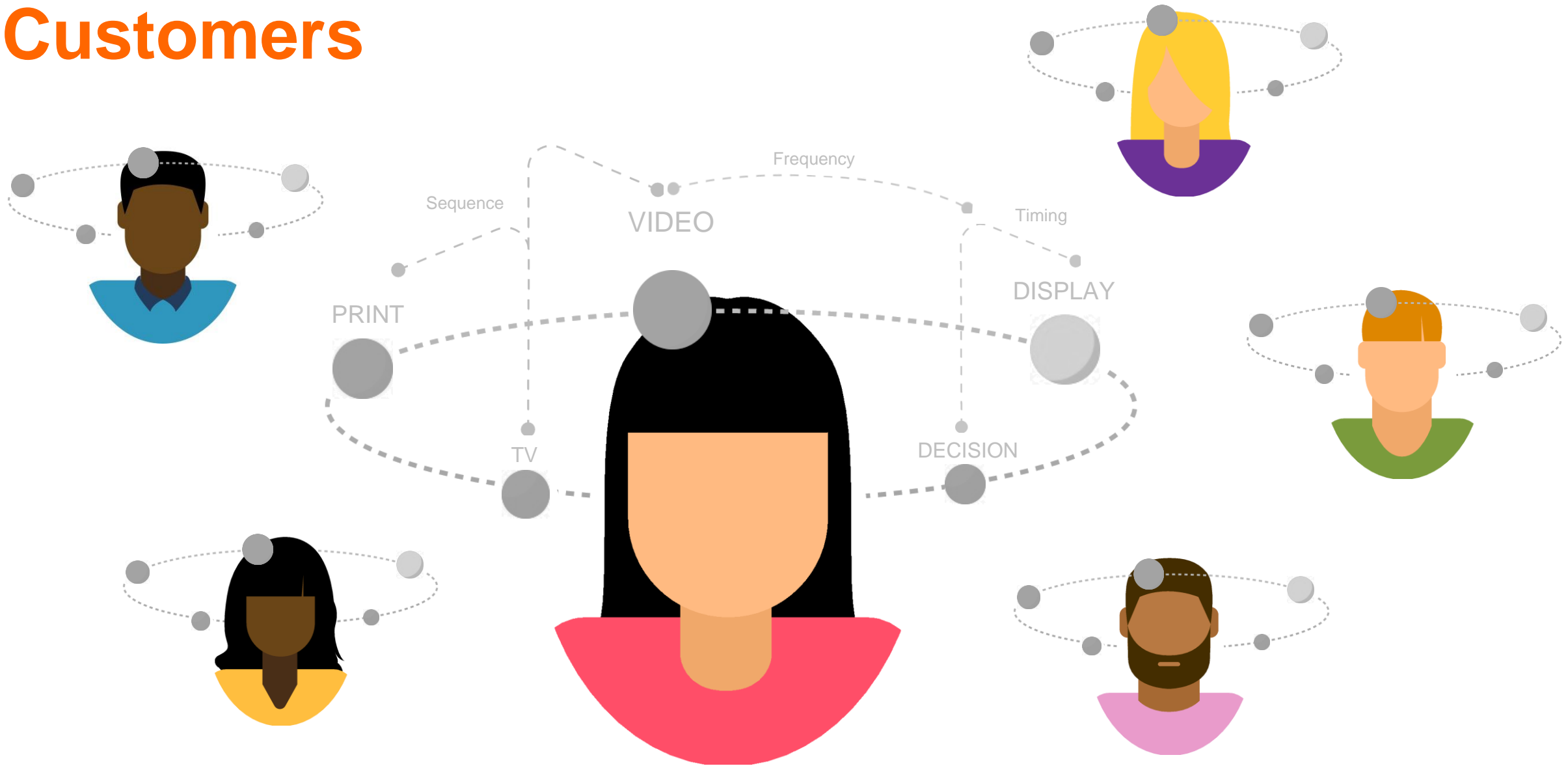


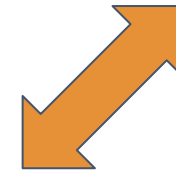
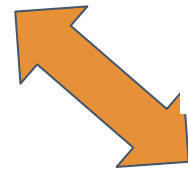
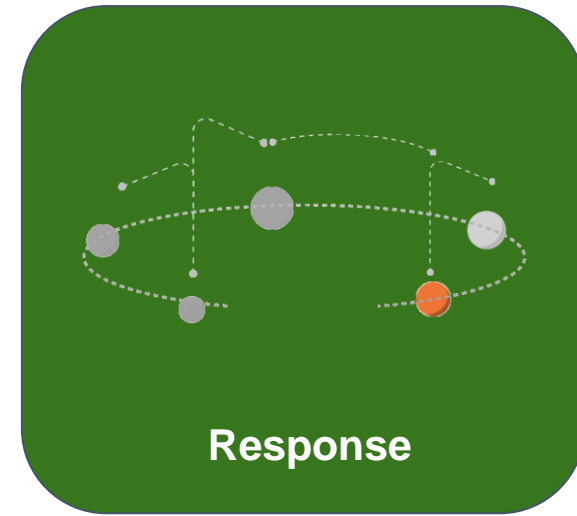
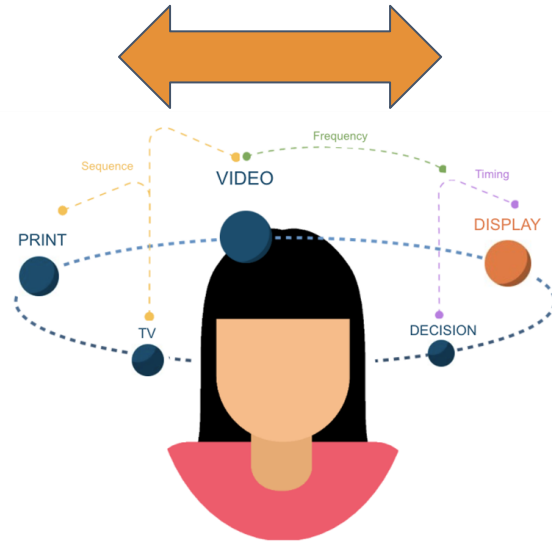
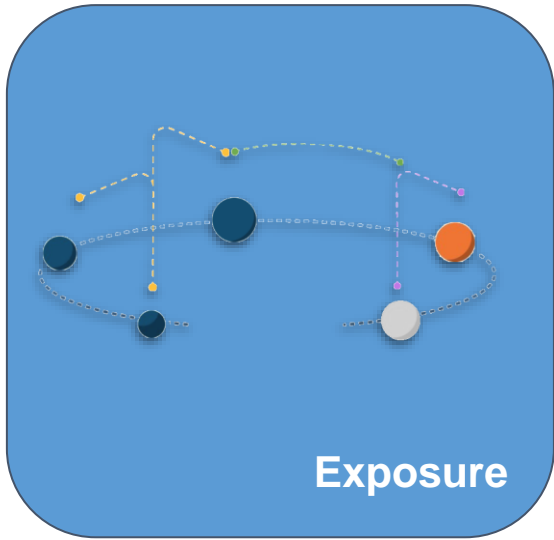


# Response



# Customers

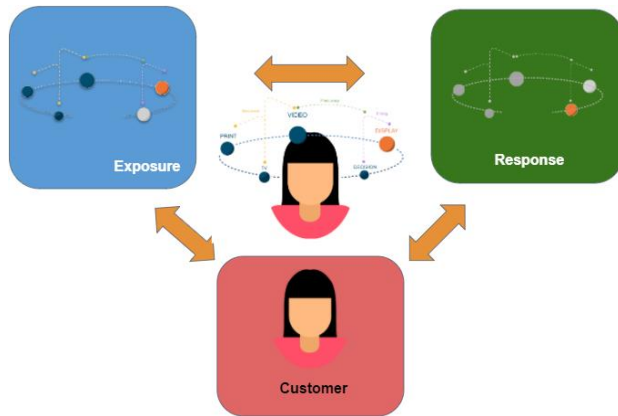




# Render the picture of the data

## User-Level Logs

	id	sales_timestamp	exposure_timestamp	network	tactic	genre	creative_id
1	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-19 01:44:43	tbs	mlb baseball	entertainment	35865299
2	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-19 01:31:11	tbs	mlb baseball	entertainment	35865299
3	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-01 00:09:36	cbs	60 minutes	locals	35089227



## Aggregate Data

	dma	week_start	week_end	media	network	impressions
1	atlanta	2018-10-14	2018-10-20	television	nbc	324310
2	phoenix	2018-10-14	2018-10-20	television	nbc	258244

## True Simultaneous Nested Estimation for Unification

	id	sales_timestamp	exposure_timestamp	network	tactic	conversion_attribution	baseline_conversion_probability
1	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-19 01:44:43	tbs	mlb baseball	0.05	0.6
2	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-19 01:31:11	tbs	mlb baseball	0.025	0.6
3	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-17 00:00:00	nbc	fall campaign	0.15	0.6
4	++IgUs7l8apkJ98	2018-10-28 00:00:00	2018-10-01 00:09:36	cbs	60 minutes	0.175	0.6

Customer Estimation

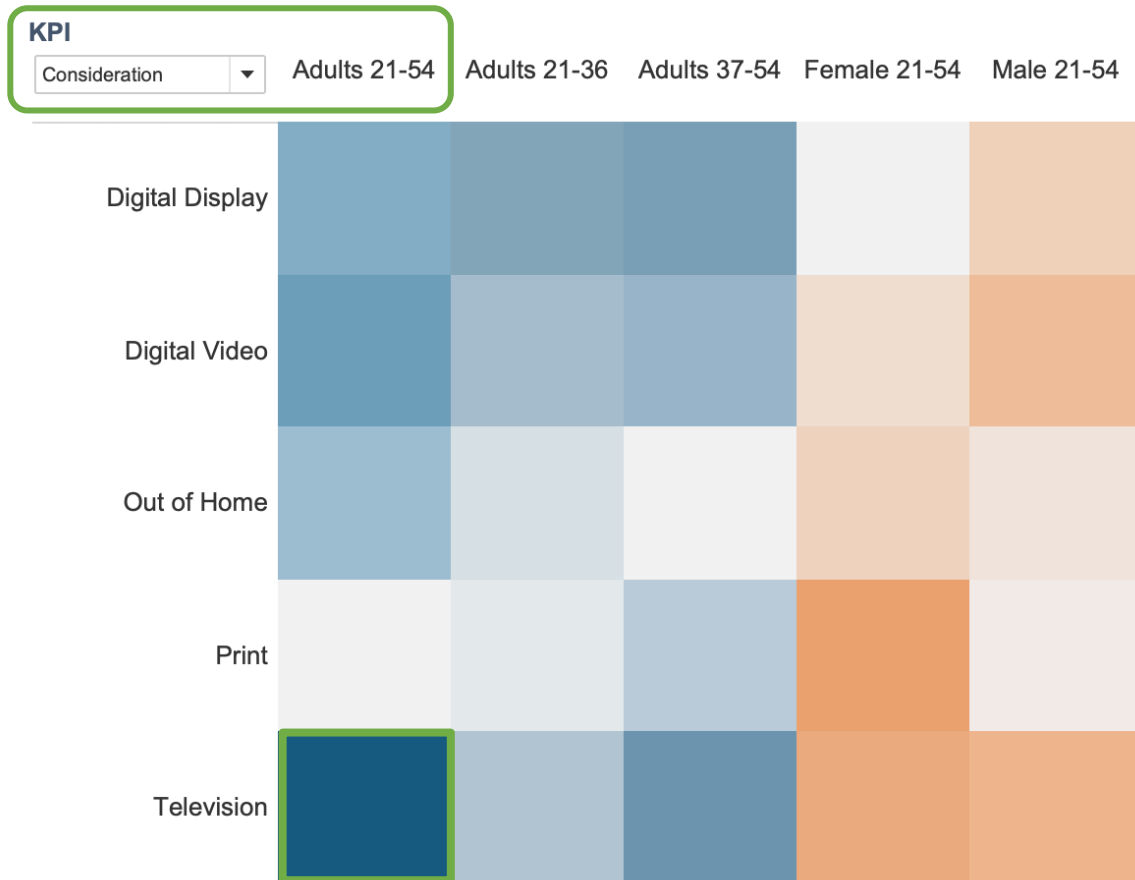
Exposure Estimation

Response Estimation



# Deliver Impact-Based Media Plans With Consumer-level Measurement of Effectiveness

## KPI driving audiences for multi-KPIs in customer life-cycle

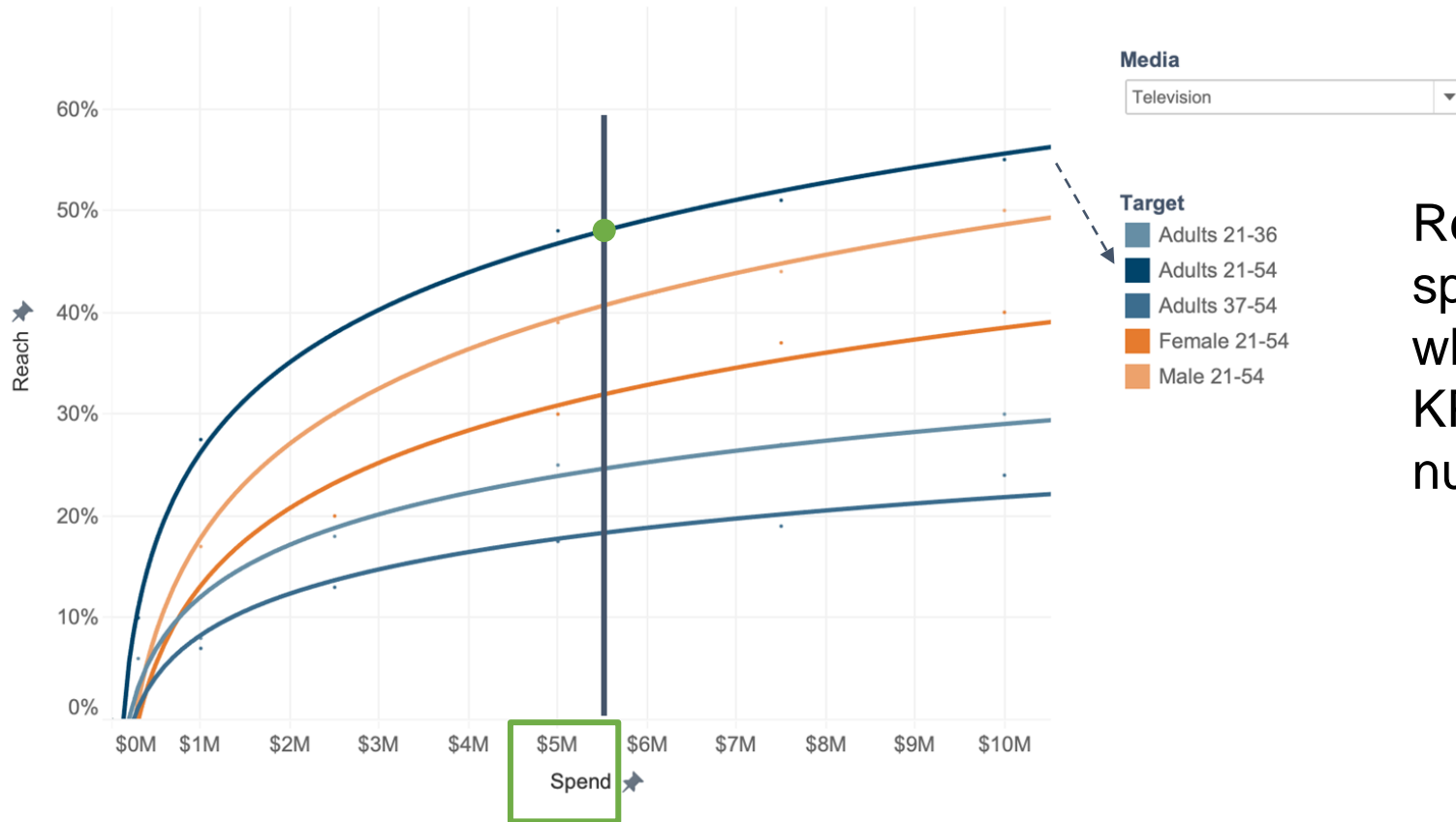


### Use Case:

Initial takeaway from heatmap is that TV is driving higher 'Consideration' KPI among the **Adults 21-54** segment, which may motivate the marketer to deploy majority of spend towards reaching that segment via **TV**

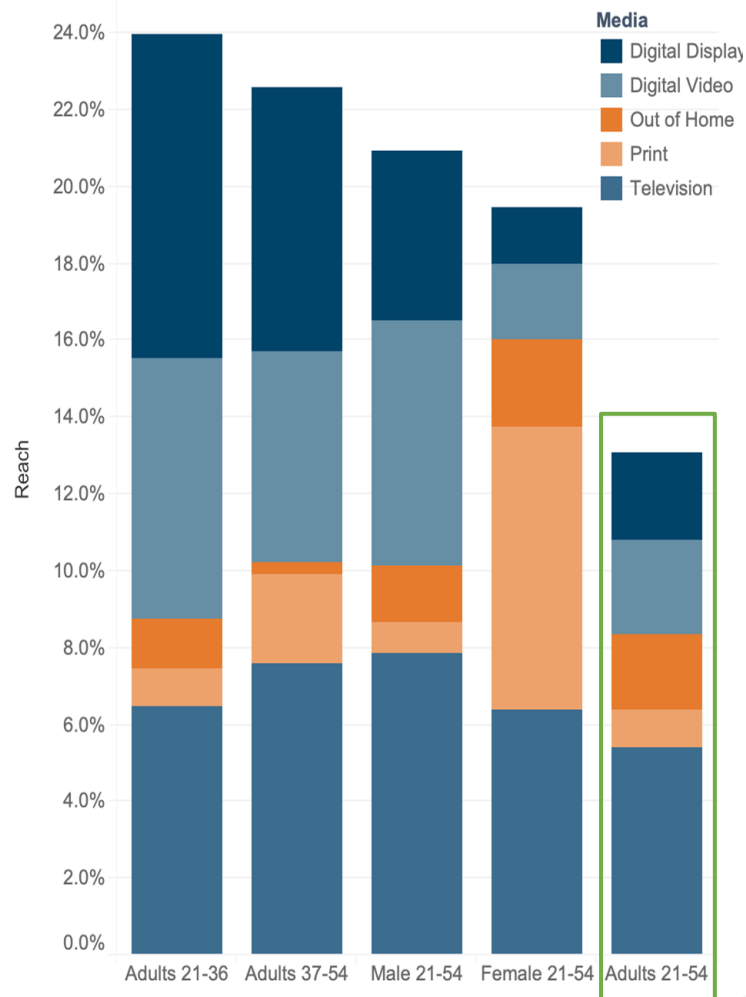
# Deliver Impact-Based Media Plans While Achieving Efficiency

Planning that reaches the KPI optimizing Audiences Efficiently

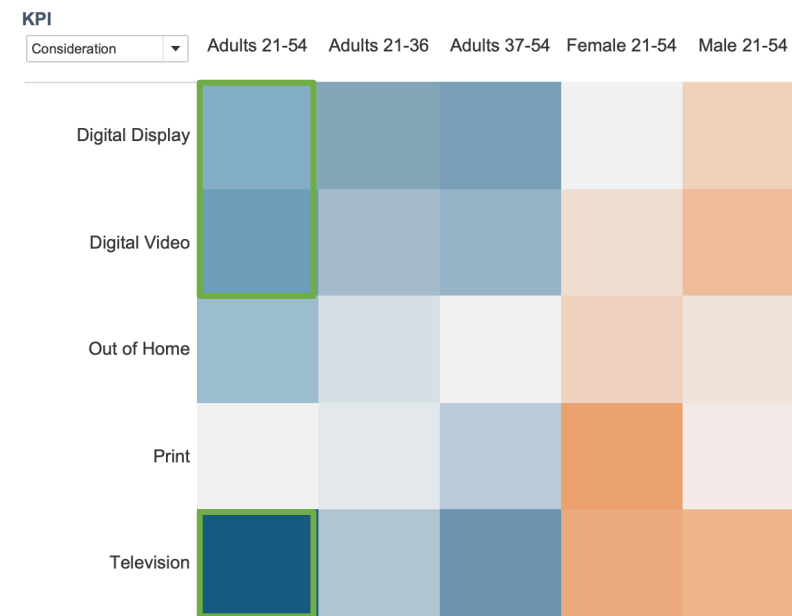


Reach Curves point to **\$5.5 MM** in TV spend as the optimal investment which maximizes the 'Consideration' KPI, while reaching the highest number of **Adults 21-54**

# While TV is effective, with optimal tactics, there may not be an opportunity to reach key audiences and we must consider cost



But, wait!  
 Reaching **Adults 21-54** can be even more efficient with an omni-channel media plan leveraging Display and Video, which proved to have good impact on the KPI, along with TV



# Flexibility & Resilience to Data Availability

## Simultaneous Determination Remedies:



Under and Over  
represented customers



Missing or incomplete  
understanding of  
exposure reach and  
frequency



Limited or missing  
picture of the distribution  
of customer response



# Implementation: Optus

# Outcome: Optus

**Thank You**





**MARKETING  
EVOLUTION**

