Measurement in advertising

How we think about it and where it fits in media planning and buying

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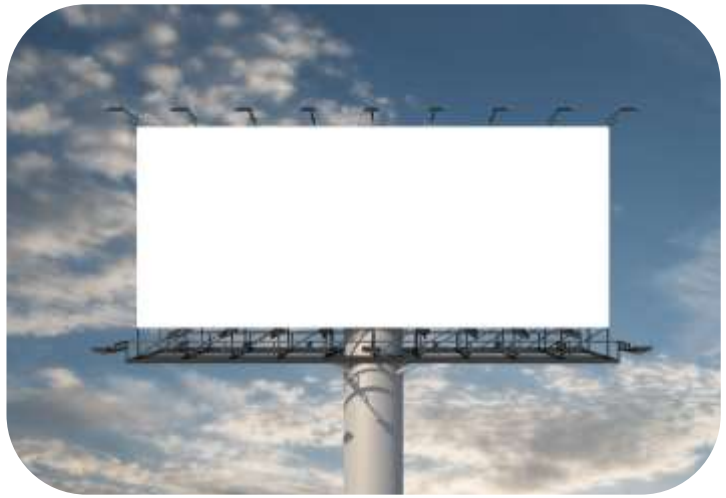
What do we mean by measurement

John Wanamaker, Pioneer of Advertising/Curmudgeon-ery

The purpose of measurement is…



to **understand** what advertising works well…

so that brands and agencies can make better **decisions**…

on how to advertise more effectively.

… to understand the drivers of Business Outcomes …

Advertising activity

- Country
- Brand
- Channel
- Environment
- Tactic
- Creative

Other Marketing Drivers

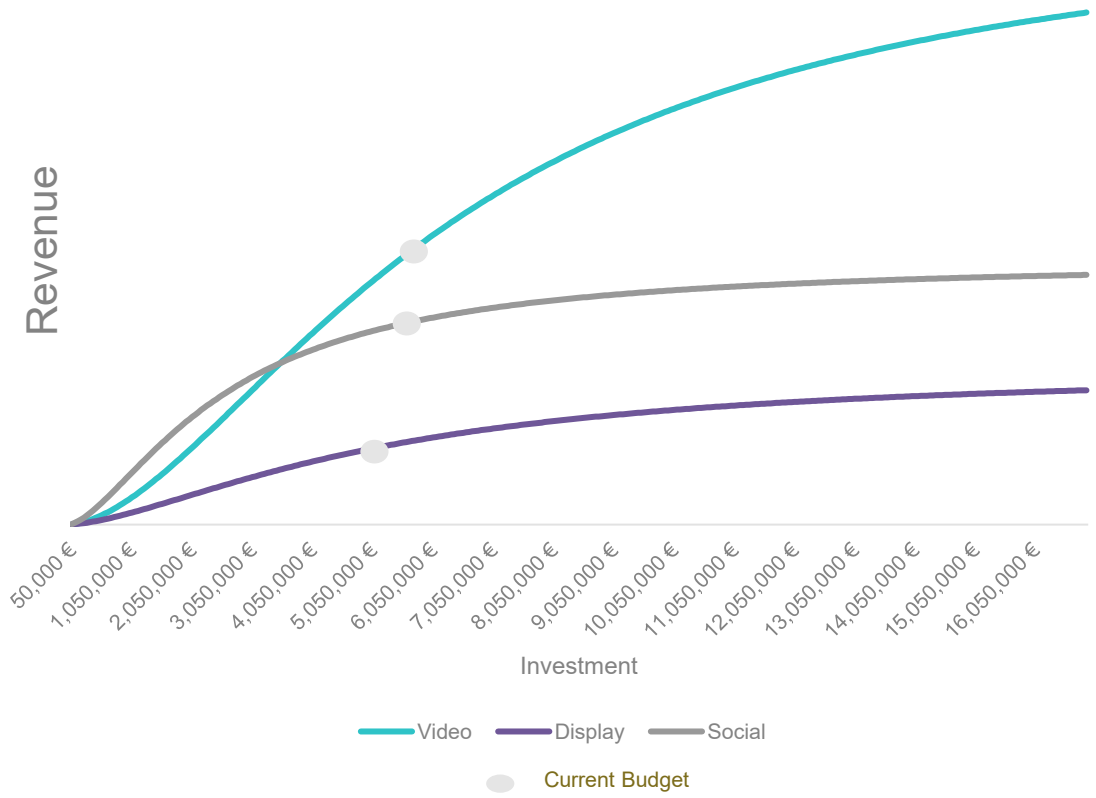
- Pricing
- Promotions
- seasonality
- Brand equity
- Competition
- Macro Shocks

Business outcomes

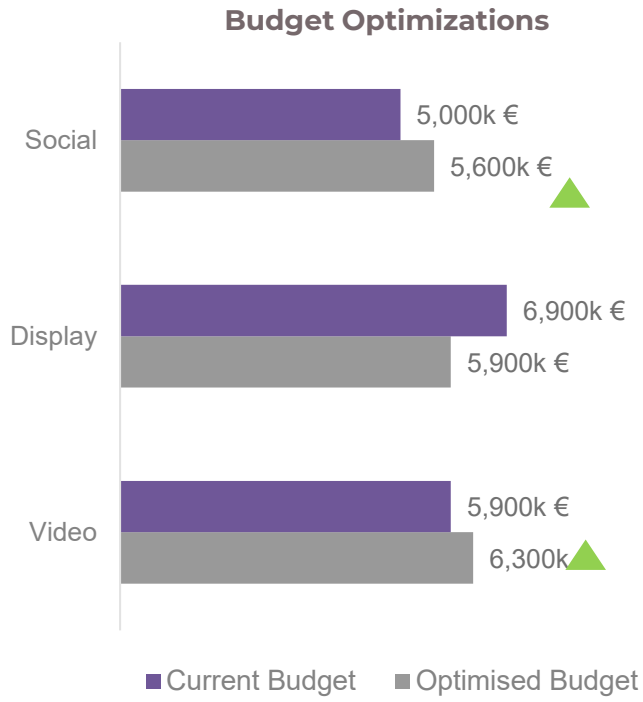
- Sales
- Brand consideration
- Physical or digital traffic
- Attention

… to drive optimizations.

What is the additional KPI I drive from an advertising tactic?
e.g. from Channel Level results



What is the outcome of an optimization?
By increasing Offline and TV at expense Digital, can **+€6M** ad revenue



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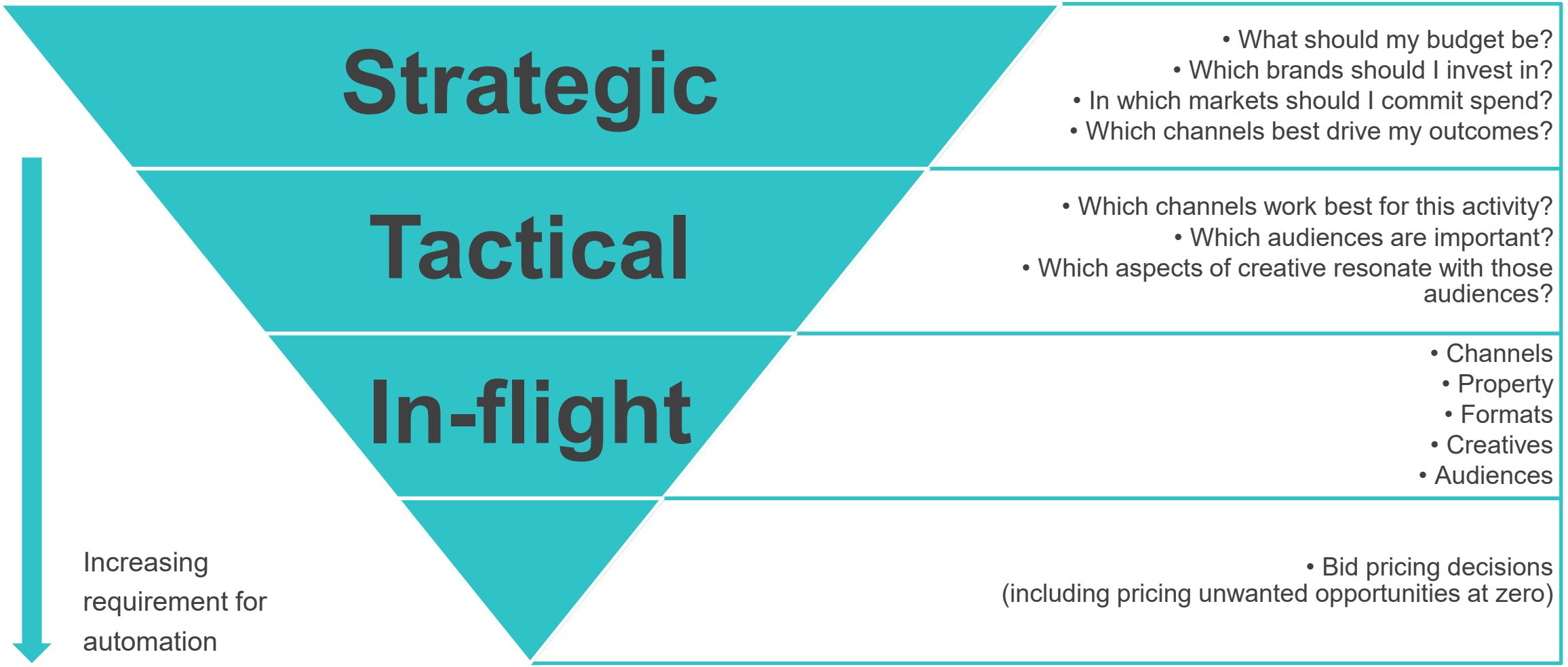
Measurement informs decision-making

Measurement informs marketing decisions at multiple levels



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Not everything that counts can be counted

- Latency may be too great for your use case
- Frequency may be too low
- Accuracy may be too low
- Granularity may be too low
- Or maybe too costly to gather (e.g. some aspects of consumer sentiment)

… so it's common to look for metrics that are easier to measure. Ideally you find a good proxy or a genuine leading indicator. More often you find a less good proxy.

Not everything that can be counted counts

Digital metrics have historically been easiest at the tactical end (drop a tag, write a database record). However these may be *terrible* proxies.

- It's fairly easy to track a sign-up form. Optimise to this and you will find cheap new users. What if they also don't spend much with you? Or anything?
- Maybe you're driving individual sales, and you can track sales in your online store. But what if you sell more on Amazon? Or in Safeway? Or in coin operated dispensers in restrooms?
- And what if your KPI is "people encouraged to wear masks to inhibit airborne spreading of diseases"? "Went to a webpage" probably doesn't tell you anything. (We have governments as clients.)

Events vs Behaviours

Strategic measurement can often operate via aggregation of events

How do changes in

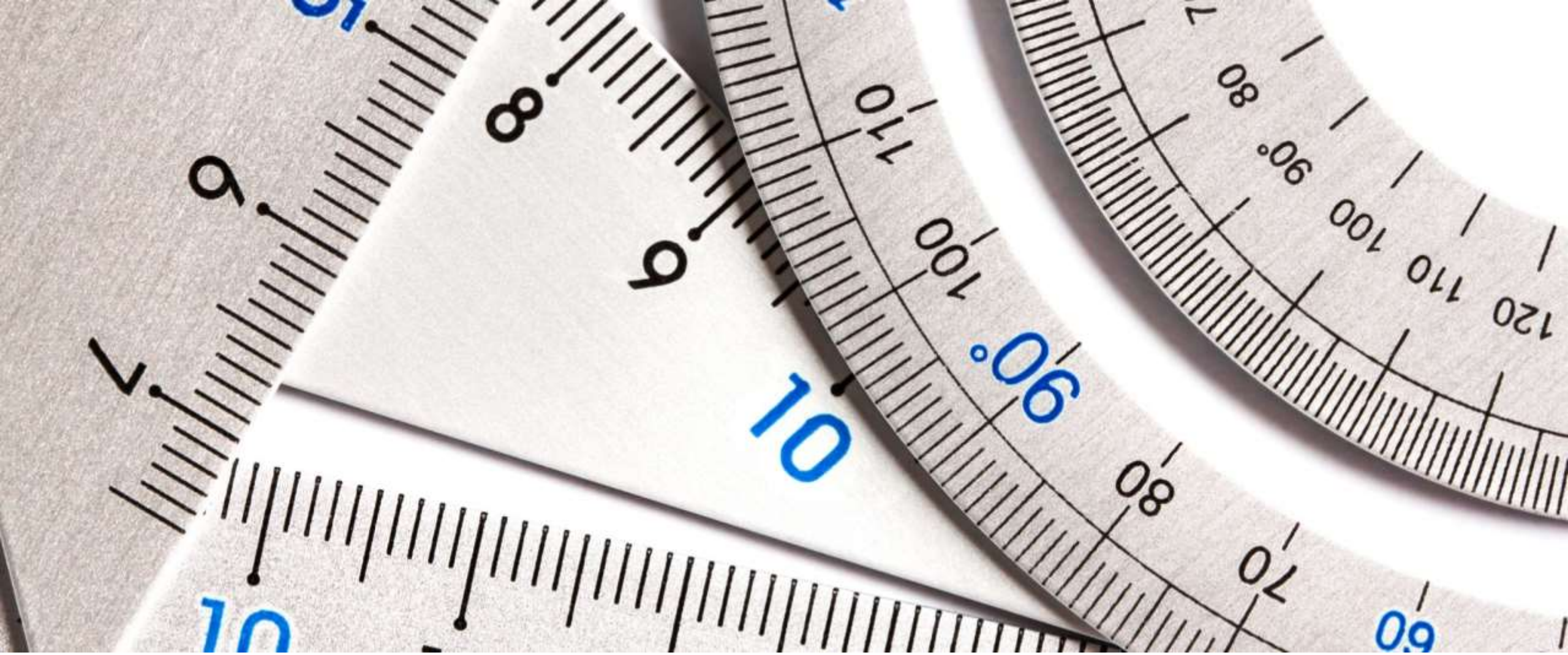
- *Total ad spend*
- *Pricing effects*
- *Economic factors*

drive changes in

- *Total sales data*
- *Brand metrics*

Tactical measurement more often requires understanding individual behaviours

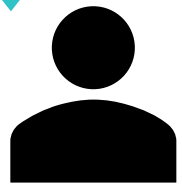
- What frequency should I aim for in this channel?
- Which environments have the most impact on my outcomes?
- Which creatives / ad copy are performing best?
- How much does sequencing (environments, creatives) matter?



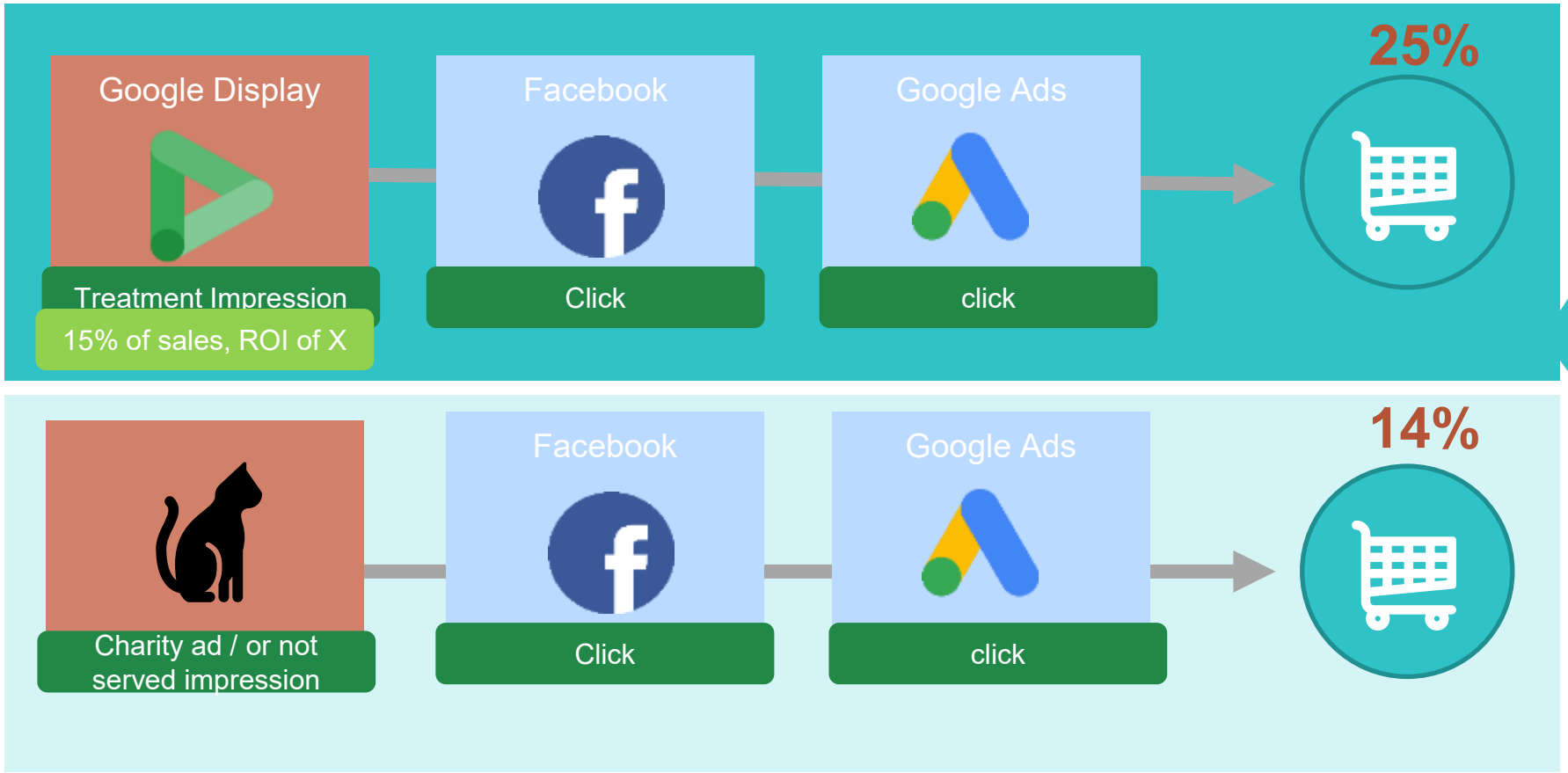
Measurement techniques

Lift Studies in a nut-shell

customer is randomly allocated before bid is made..



by segment, demo, etc..

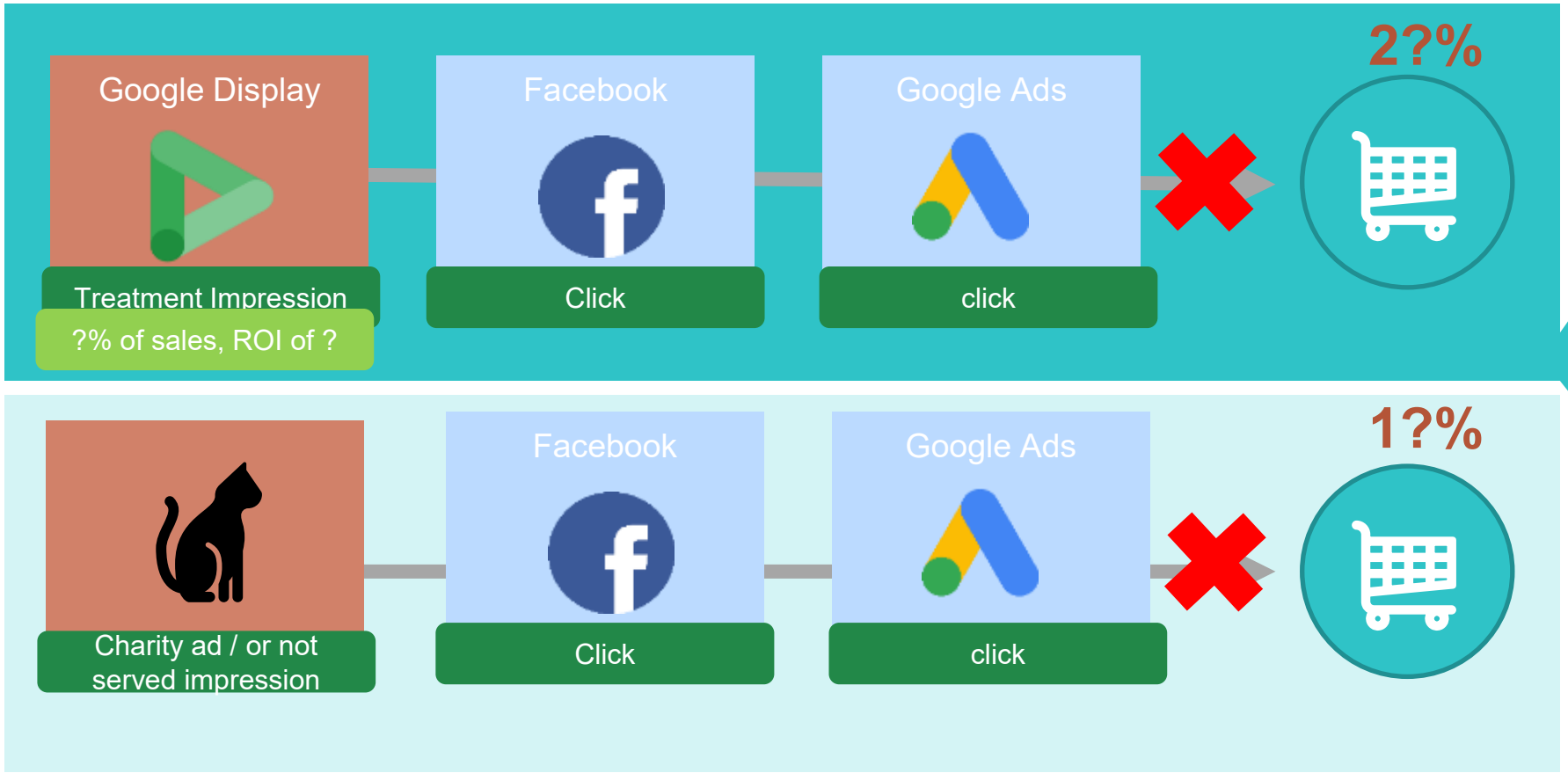


Final statistical comparison of conversion between groups will only isolate effect of Treatment

Needs right sample size for statistical power of inferences

Key Challenge: varying capabilities across population (eg browsers) hurts generalizations

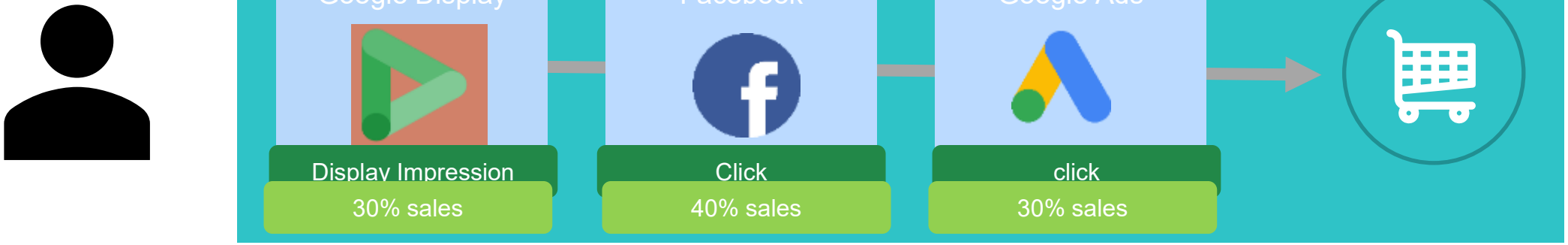
user is randomly allocated before first ad shown



If relying on data that is inconsistent across the population, can no longer make a statistical comparison*.

* This doesn't affect every possible lift study. For instance, in some cases you can allocate people to test cells based on broad geo. This is a pretty standard technique for some offline channels.

Micro: approximating the experimental design with attribution



Approximate experiment:

can we use an ML algorithm that approximates experiment, by controlling for variety of factors in calculating value of each channel?

Markov chains: example pipeline, from data to algorithm

1. Individual customer journeys

Today the data lives in platform cleanrooms and we run queries that give us aggregate outputs.

Could the same outputs be generated via MPC/TEE without recording the raw data at all?

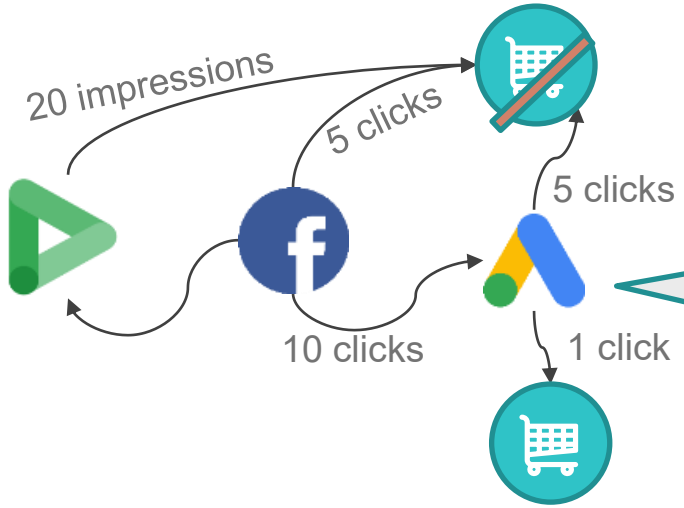
Google Ads Data Hub

Amazon Marketing Cloud

Meta's Advanced Analytics

2. Aggregate view of customer journeys using transition counts

All customer journeys summarised by graph transition counts or probabilities



3. Deploy Attribution algorithm

Markov Chains Attribution algorithm approximates an experiment: value for each touchpoint is assigned by removing it, and measuring the the total impact of sales (**i.e. removal effect**).

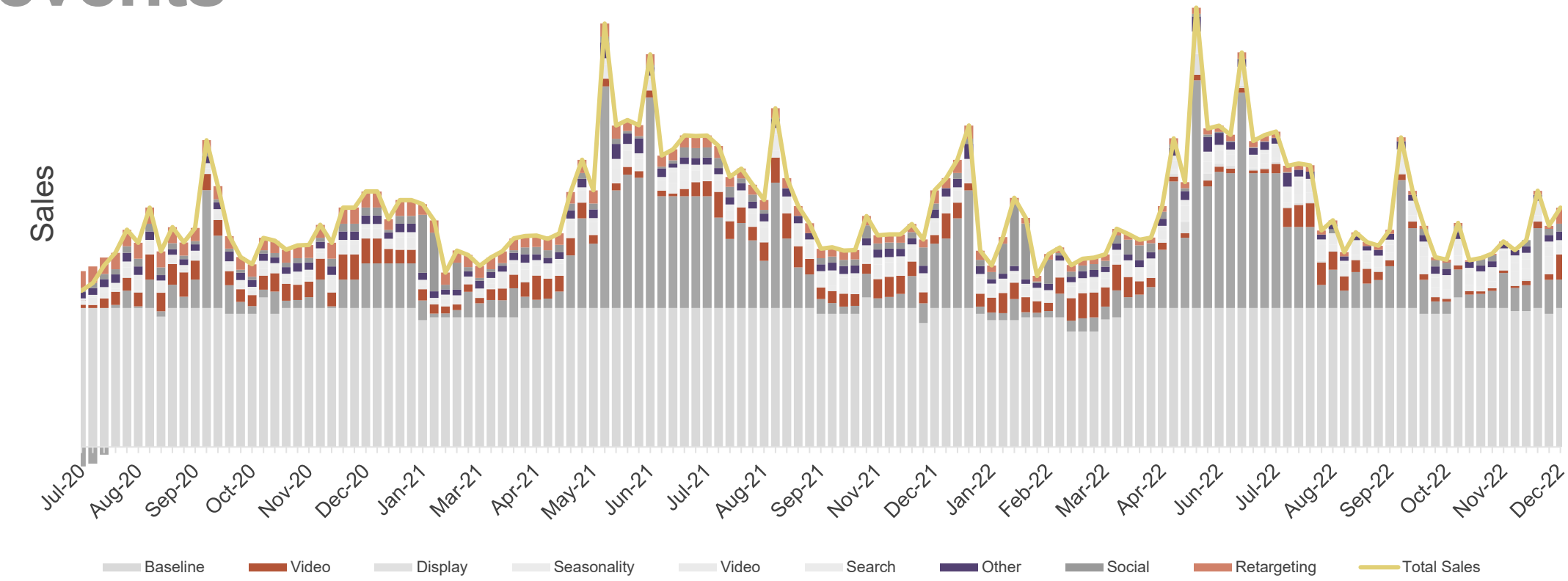
Higher **removal effect**, higher value of the touchpoint.

What is the impact of removing Google Ads from a customer journey?

Type of Algorithms and Minimum Set up

	Markov	Logistic Regression	Shapley
Minimum Requirement to run:			
Linkability requirements:	All require linking activity and outcomes (in some way)		
Minimum Requirement to run:	Aggregated transition probabilities with history of 1	Count of behaviours by user	Count of behaviours by user
Optimal set up:	Aggregated transition probabilities for N histories		Order of behaviours

Macro: leveraging time series modelling and events



Doesn't require personal data

Limited variables based on degrees of freedom

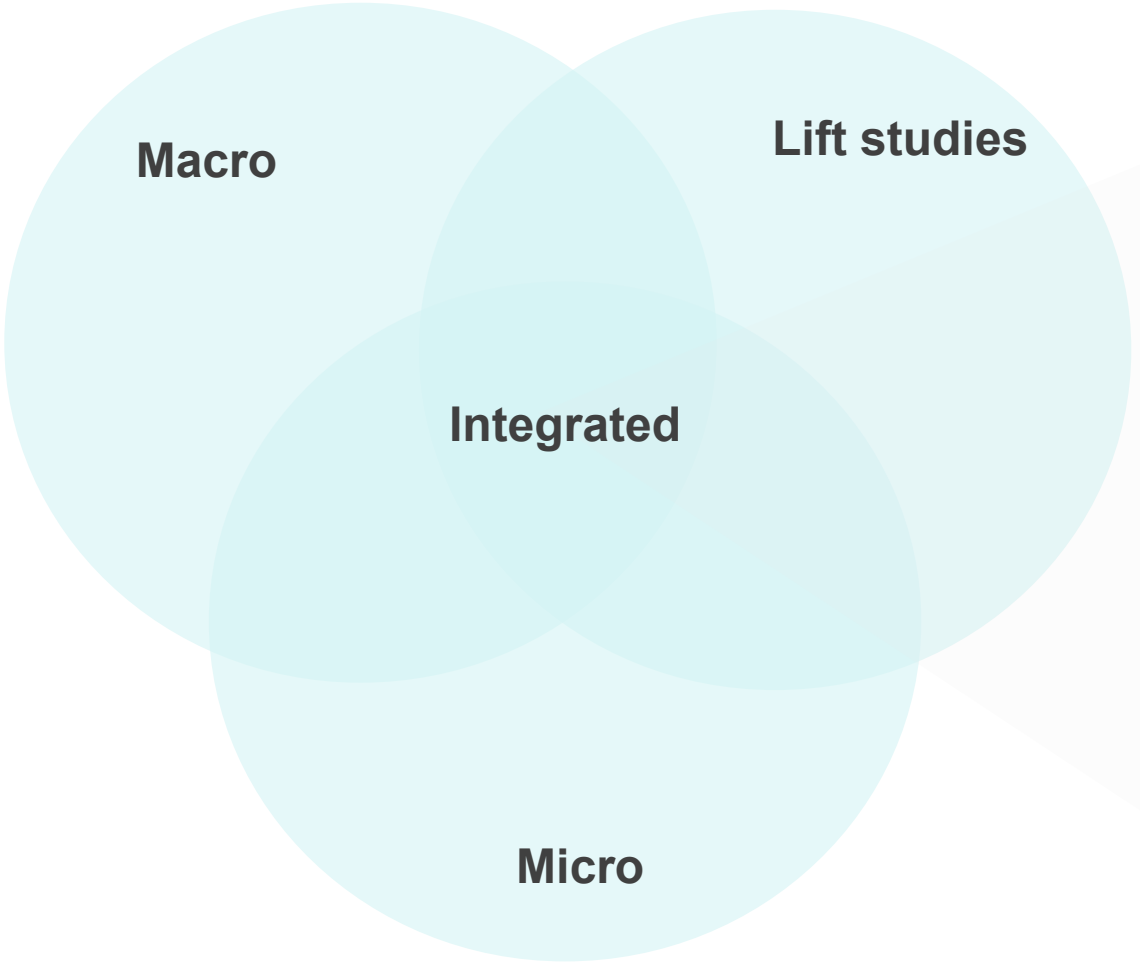
Correlation over Causation

Pros/ Cons

	Pros	Cons	Best for?	Minimum need?
Lift studies	Gold Standard of Measurement	Limited questions by experimental design	Channel benchmarks	40-50k of spend
Macro	Can measure all channels	Correlation can drive results	Understanding whole Marketing Mix	Time series / event data
Micro	Based on actual behaviours	Generally limited to digitally observable behaviour	Measuring subsample, journeys across many properties (eg digital)	Some behavioural or behavioural derived data

An integrated picture

Integrated models: Present and Future



What Integrated looks like…

- Macro model as base, as it captures all channels completely with aggregate data
- Lift studies used as priors for certain channels, grounding results in experiments where possible
- Micro results for digital channels, attribution results for channels where greater measurement precision is possible (URL rather than channel, post-view as well as post-click)

Key Questions in Defining a Measurement Solution

What is the KPI we want to measure?

- Digital Conversions
- Sales
- Brand

What is the optimization we want to perform?

- Channel
- Audience
- Creative
- Frequency
- Day/Time

Can you use Micro/Macro and Experiments as desired?

- Is your KPI measurable?
- If not, what proxies are available and how good are they?
- Is it linkable in a way that supports the optimization?
- Do you have the right data granularity?
- Do you have the right data latency?
- Is data accuracy sufficient?