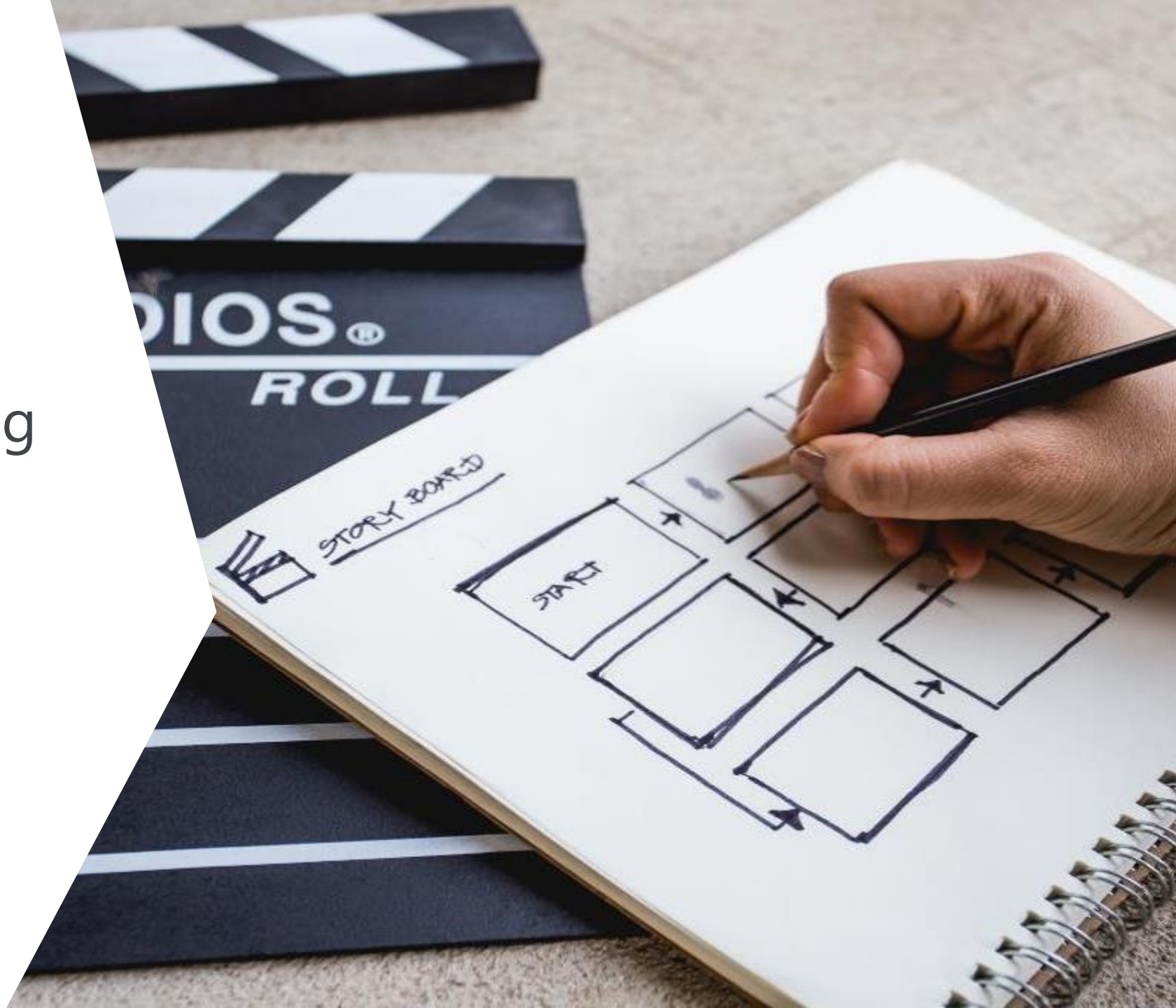




Growth
from
Knowledge

Maximizing Marketing
Investments in an
uncertain world

*GfK Marketing Mix
Modelling*



Presenter for today



Spencer Ng
Marketing Analytics Lead, APAC

Black Swans – you can't predict them! But we need to expect them!



CRUDE OIL CRISES

Breaches \$30/barrel – lowest level since 12 years ago

2014

2015

2016

2018
-19

2020

BREXIT

UK leaving the EU

COVID 19

Continuing economic after shocks

GLOBAL SELL-OFF

Sudden drop in stocks triggered by the Black Monday in China

CHINA

US-China trade war
Hong Kong protests

Uncertain depth and length of economic shock

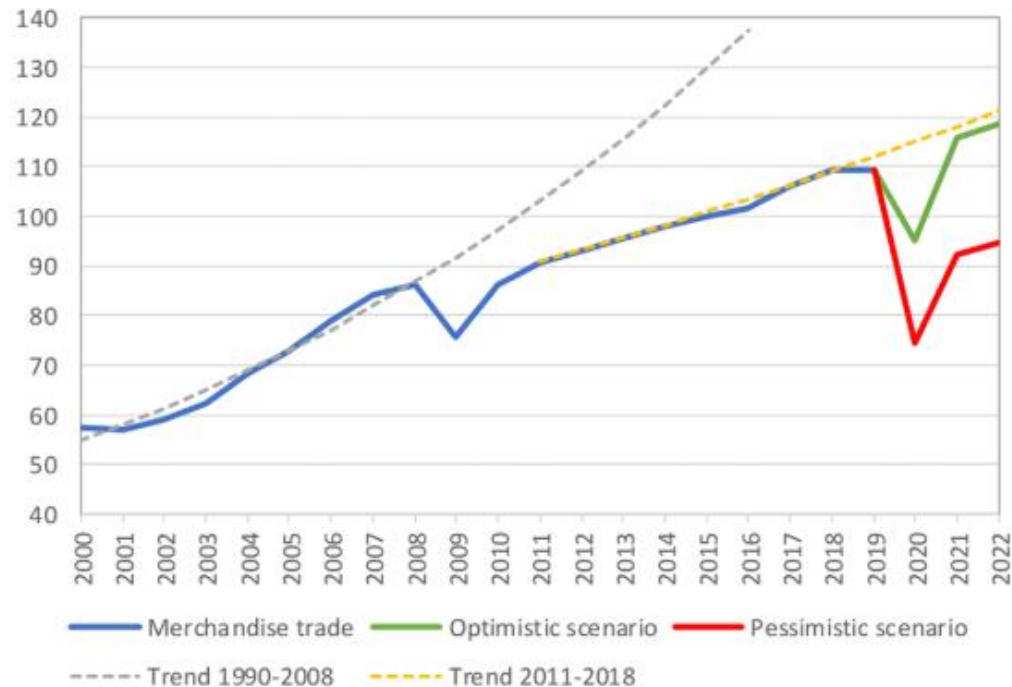
Be prepared for a wide range of scenarios



Uncertainty built into forecasts

World merchandises trade volume

(Index, 2015 = 100)



Optimistic scenario:
Return to normalcy after
trough in 2020

Pessimistic scenario:
Deep trough in 2020
with international trade set
back by 10 years

History has shown us that the future is uncertain. Being prepared for disruptions will be critical for success...

...and speaking of disruptions...

Major disruptive events in the world of digital in 2020

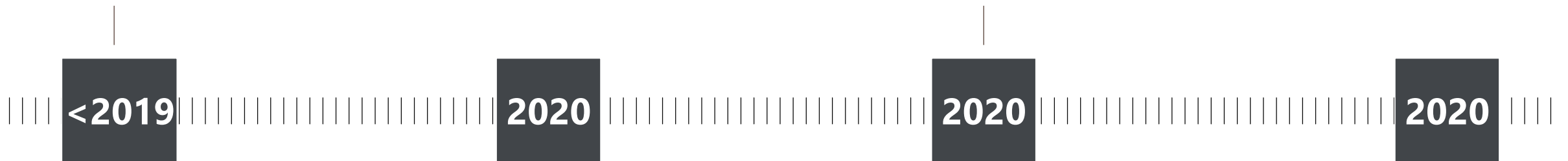


INTERNET PRIVACY RULES

GDPR and other regulations

GOOGLE

Restrictions around 3rd
party cookies



APPLE

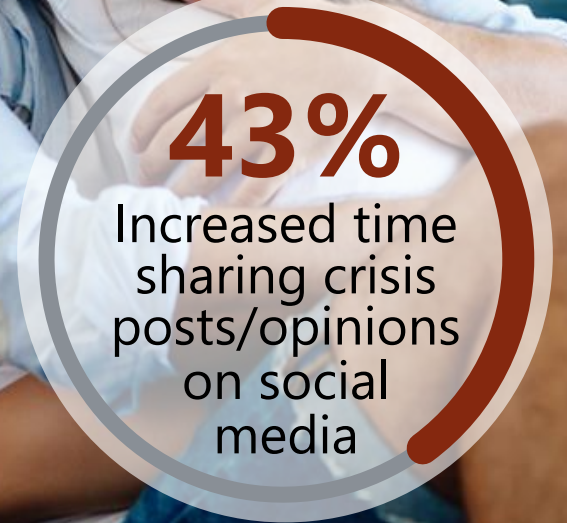
Restrictions around 3rd
party cookies

COVID 19

Digital media
consumption is
changing

Dramatic shift in media consumption

More digital consumption as stay at home becomes a norm



Doing more of than usual ... APMEA 7 Average

Digital media consumption is accelerating at the same time as the introduction of digital advertising attribution restrictions



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Measuring and optimizing marketing performance in an uncertain world



How do we make sense of this uncertain world?



We need to divide this world into two camps

CONTROLLABLE FACTORS

- Media investments
- Branding/Messaging
- Promotional activities
- Distribution
- Pricing
- Product launch

UNCONTROLLABLE FACTORS

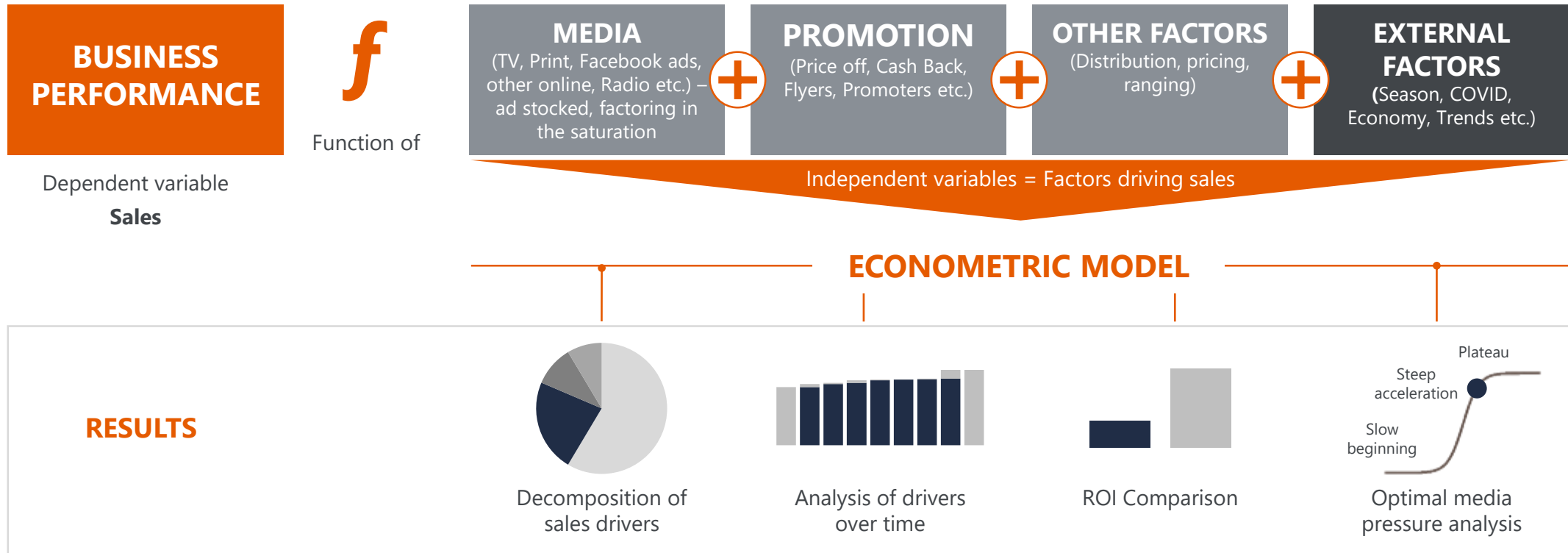
- Macro - economic factors (e.g. taxation)
- Healthcare factors (e.g. COVID)
- Government regulations
- Consumer sentiment
- Category trends

BUSINESS PERFORMANCE

Let's put this uncertain world into a model

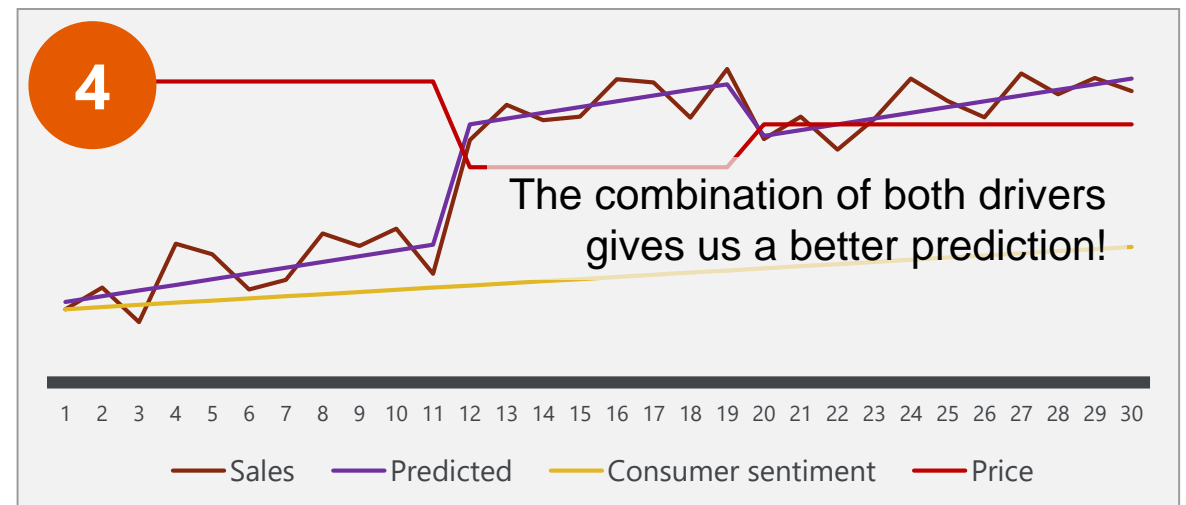
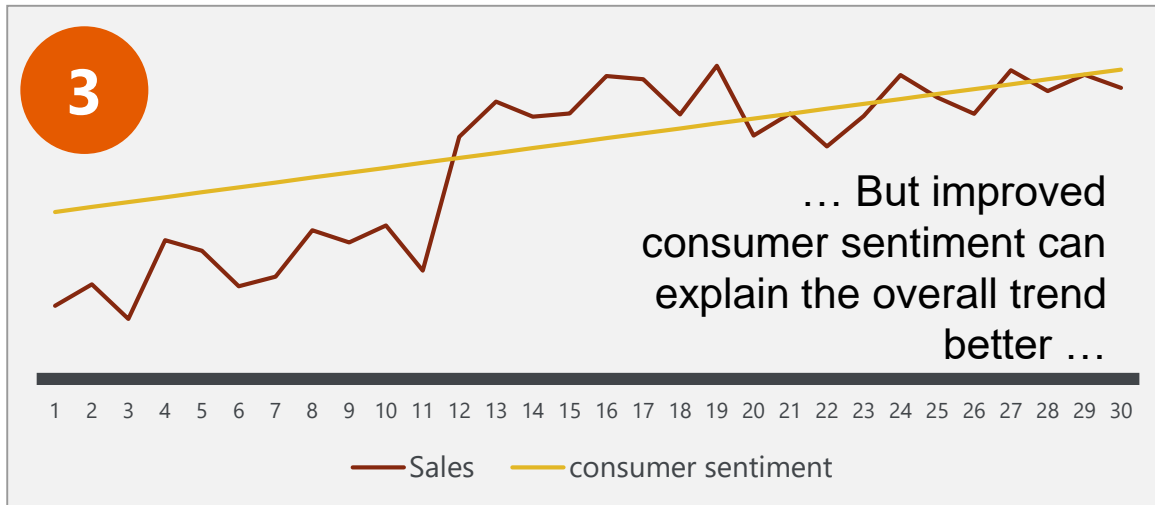
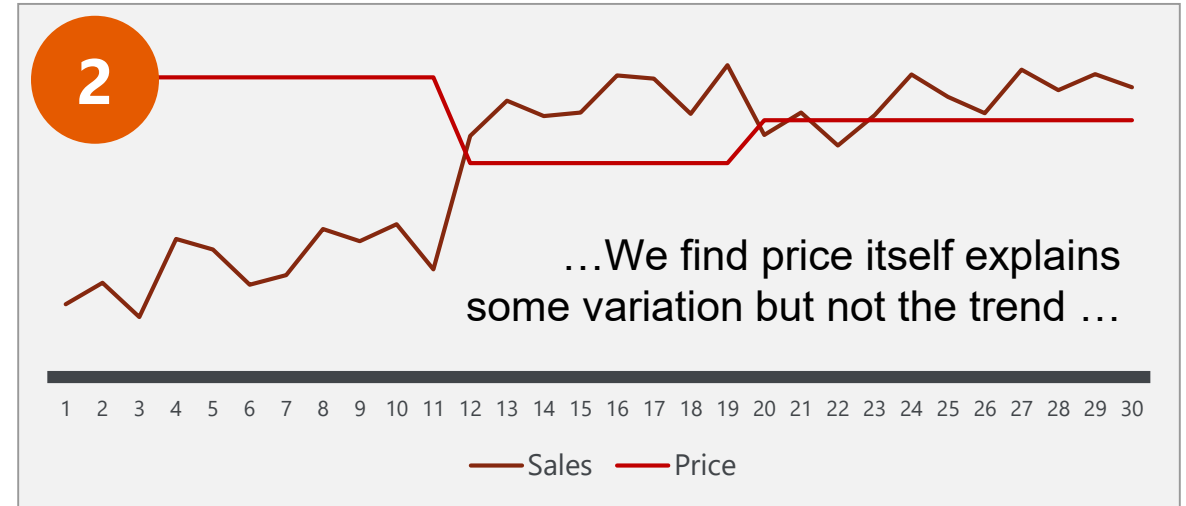


Consider using a marketing mix model to represent this wide array of factors



▶ Marketing Mix Modelling is based on modelling logic – not attribution logic

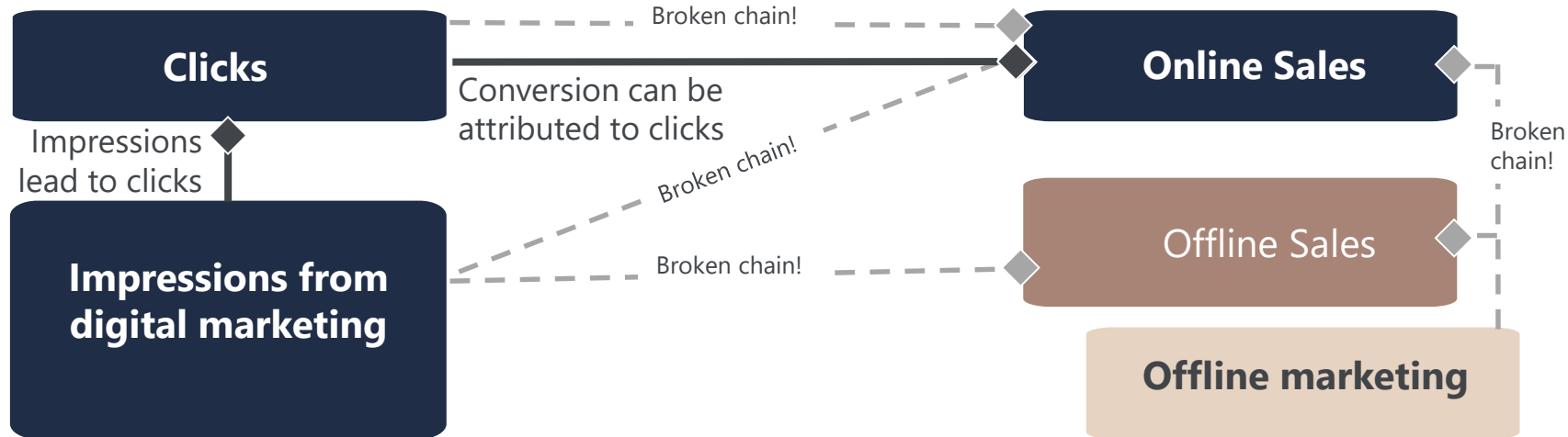
Marketing Mix Models relies on modelling logic....



Marketing Mix Models do not depend on digital attribution logic



Broken chains in a digital attribution



Digital attribution

- Getting harder to do attribution
- Marketing Mix Models don't resolve these broken chains but it sidesteps the problem through time series modelling

Will there be more or less broken chains with third party cookies being eliminated from browsers?



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Managing uncertainty

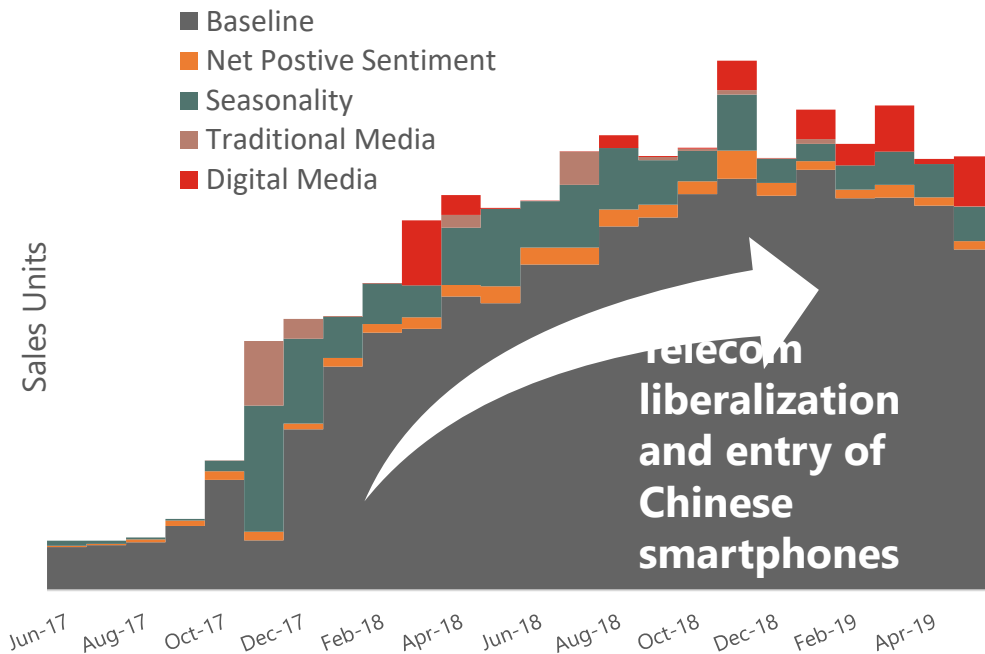


Recognize underlying factors that drive business performance beyond our control



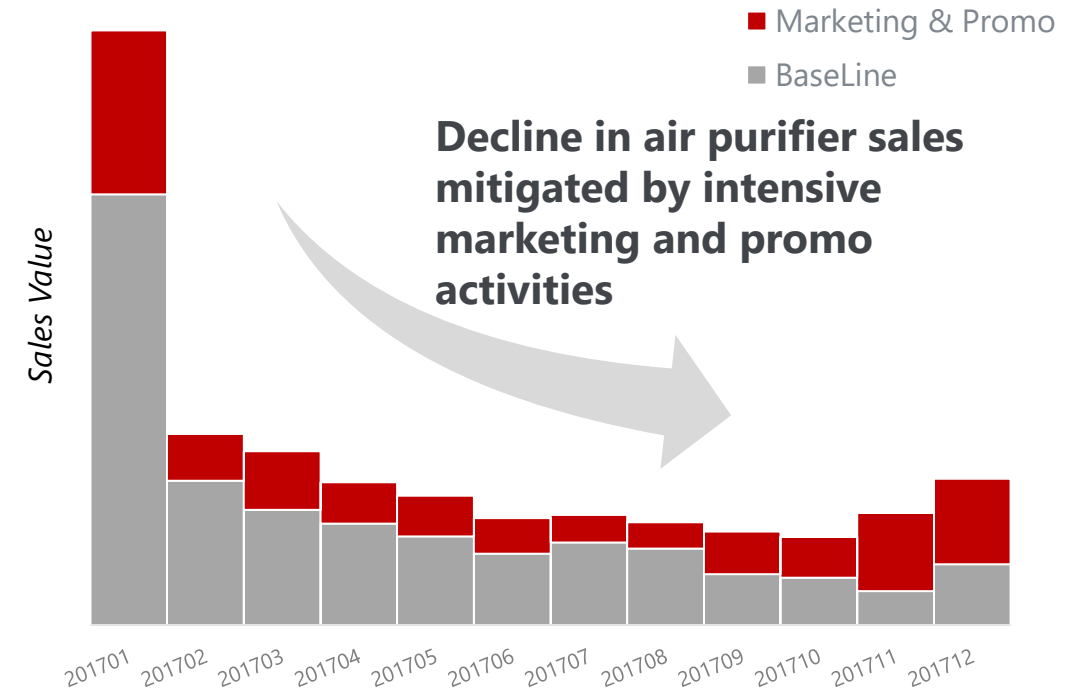
Baseline sales driven up by regulatory development

Case study: Chinese smartphone brand introduction into India



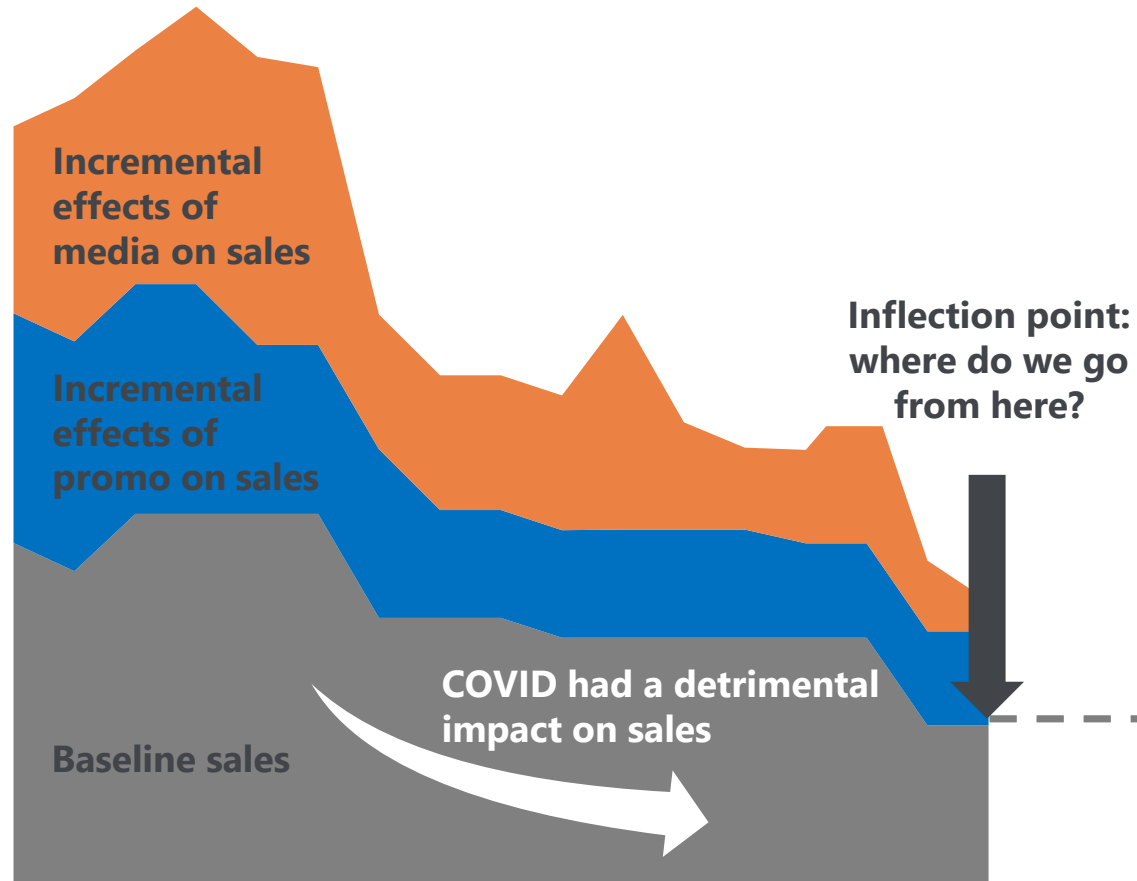
Baseline sales driven down by environmental factor

Case study: Air purifier sales



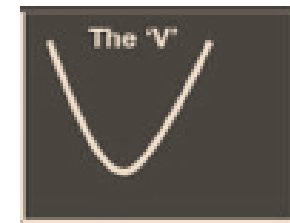
Conceptualize the various scenarios that may pan out

Sales Decomposition



● V shaped recovery

Consumer behavior return to normal. Revenge shopping



● U shaped recovery

Slow recovery
Some media consumption habit disruption



● L shaped recovery

Major consumer habit changes.
No sales recovery



**We don't know which scenario
will play out...**

**...so we need to prepare a plan to
optimize marketing budget for
each scenario**

Everyone has a marketing plan



But is this marketing plan optimized against your KPI?

Furthermore, with growing uncertainty in the business environment, a marketing plan must be able to pivot quickly by preparing back-up plans before hand to deal with different scenarios

DIGITAL MARKETING PLAN

CAMPAIGN TYPE	PROJECT GOALS	Q1			Q2			Q3			Q4		
		Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17
National Marketing													
Banner Ads													
Local Marketing													
Web Ads													
Public Relations													
Press Releases													
Webinars													
Content Marketing													
Sponsored Content													
Landing Page													
White Papers / ebooks													
Social Media													
Twitter													
Facebook													
Pinterest													
Instagram													
Google+													
LinkedIn													
Online													
Blog													
Website													
Mobile App													
Mobile Alerts													
Email Newsletter													
Web													
Development													
Pay-Per-Click Marketing													
SEO													
Market Research													
Surveys													
Impact Studies													
Sales Campaigns													
Campaign A													
Campaign B													
Campaign C													

Imagine this.....



Imagine you are Doctor Strange in Avengers Infinity wars – you could see multiple versions of reality – and pick the one where you win!



14,000,605 possible versions of the future in ~ 1min with the Time Stone!

Imagine that you could use GfK machine learning to create multiple versions of your marketing mix plans and shortlist the best ones?

Yearly Media Net Spend (EUR)				
Media Activity Level	Media Activity	Last Full Year	Optimized (Sales)	Difference
Media Type	Media Traditional	732 417	760 520	+3.8%
Media Type	Media Digital	86 243	58 140	-32.6%
Media Activity	TV	732 417	760 520	+3.8%
Media Activity	Google Display	10 013	20 026	+100%
Media Activity	Google Online Video YouTube	0	0	-
Media Activity	Yahoo Native	5 549	2 774	-50%
Media Activity	Yahoo Search	70 681	35 340	-50%

~2,500 simulations in 1min to reach optimized marketing mix with GfK

Foresee likely outcomes beforehand and pick the best strategy!

Whatever the scenario might be – we need to make the best of it by optimizing each marketing plan



Run Optimization

We can do this efficiently with GfK MMO by running Optimization (~3min) for each scenario using an ensemble of algorithms!

Optimize your marketing budget for different scenarios

Maximize Sales Minimize Media Budget

Maximize total brand sales for a target media budget - holding weekly flighting and relative weekly spend constant.

i

OPTIMIZATION SETUP

Feel free to double click in any of the last two columns to enter or delete a value.
No entry in 'Spend no more than' column means the upper possible spend limit is equal to the Total Media Spend.

Media Activity	Last Full Year Net Spend	Spend at least	Spend no more than
TV	732 417	366 208	1 464 834
Google Display	10 013	5 006	20 026
Google Online Video YouTube	0		
Yahoo Native	5 549	2 774	11 098
Yahoo Search	70 681	35 340	141 362
	818 660	409 328	1 637 320

Expected Sales Growth Factor
1

Target Total Media Spend (EUR)
818660

Method
☒ Fast Optimization
☐ More Thorough Optimization (takes longer)

Reset Run Optimization

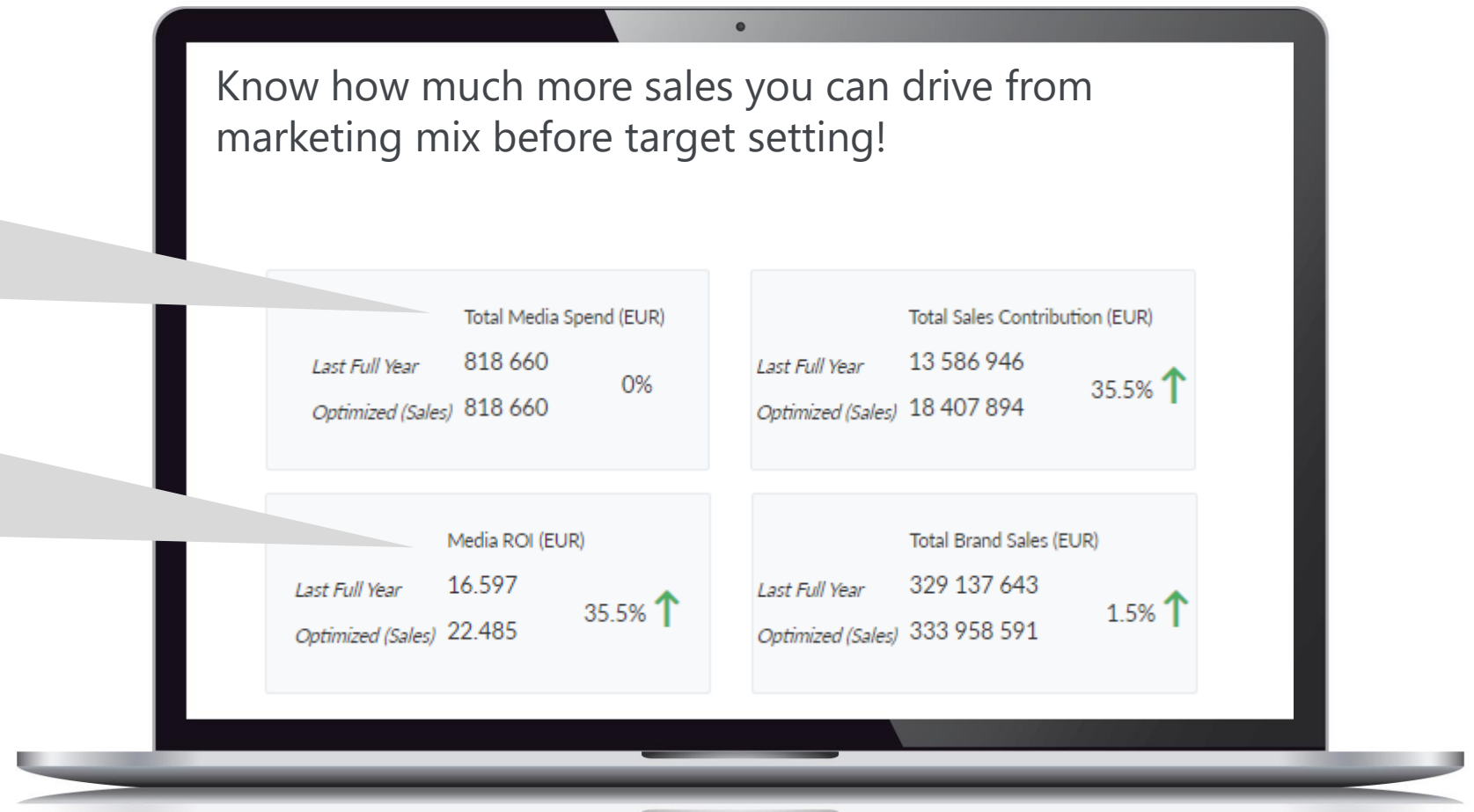
- **Sequential optimization:** for each additional unit of budget, MMO will hunt for the tactic that will deliver the best performance by comparing response curves across all tactics. It will repeat the process for the next unit of budget until it uses up the entire budget
- **Genetic algorithm:** like Darwin's theory of evolution, the MMO generates marketing mix permutations that compete with each other in a survival of the fittest. The fittest permutations are selected to produce the next generation. Each successive generation brings us closer to the pinnacle of evolution and therefore the optimum marketing mix!

Foreseeing the likely sales outcome of optimization under each scenario

Optimization of media budget but total budget unchanged

Maximize your media ROI!

Prepare to maximize your sales whatever the scenario!



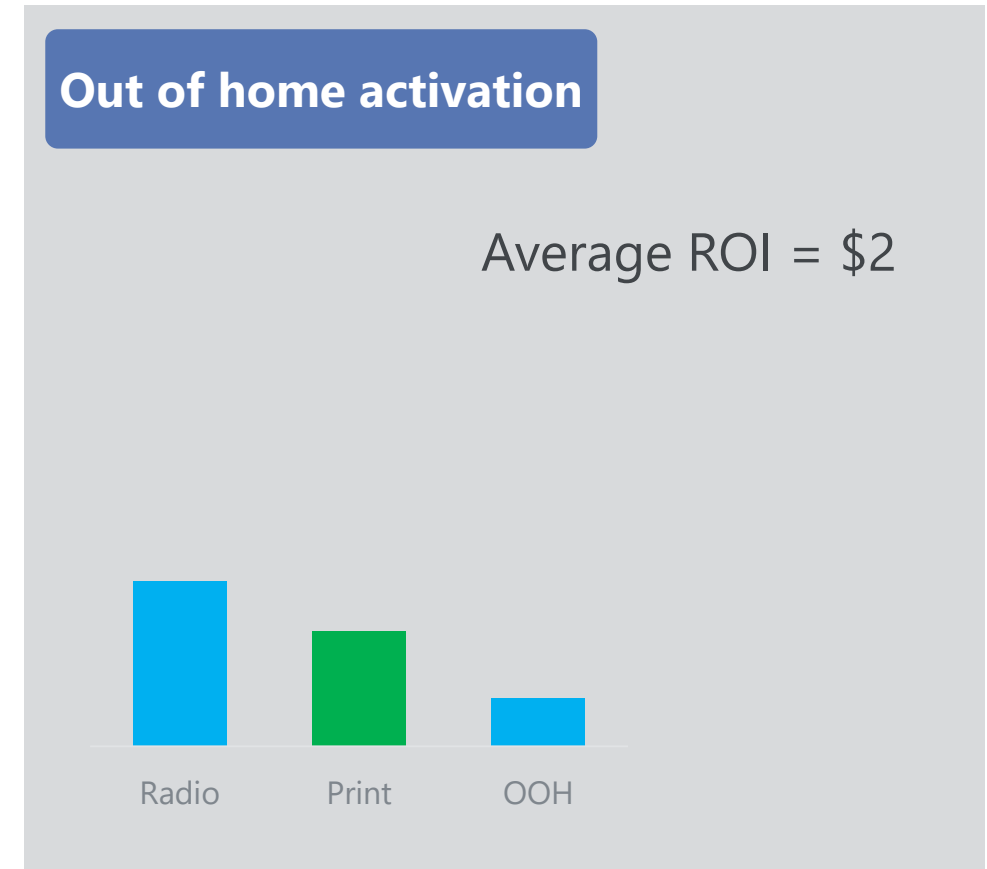
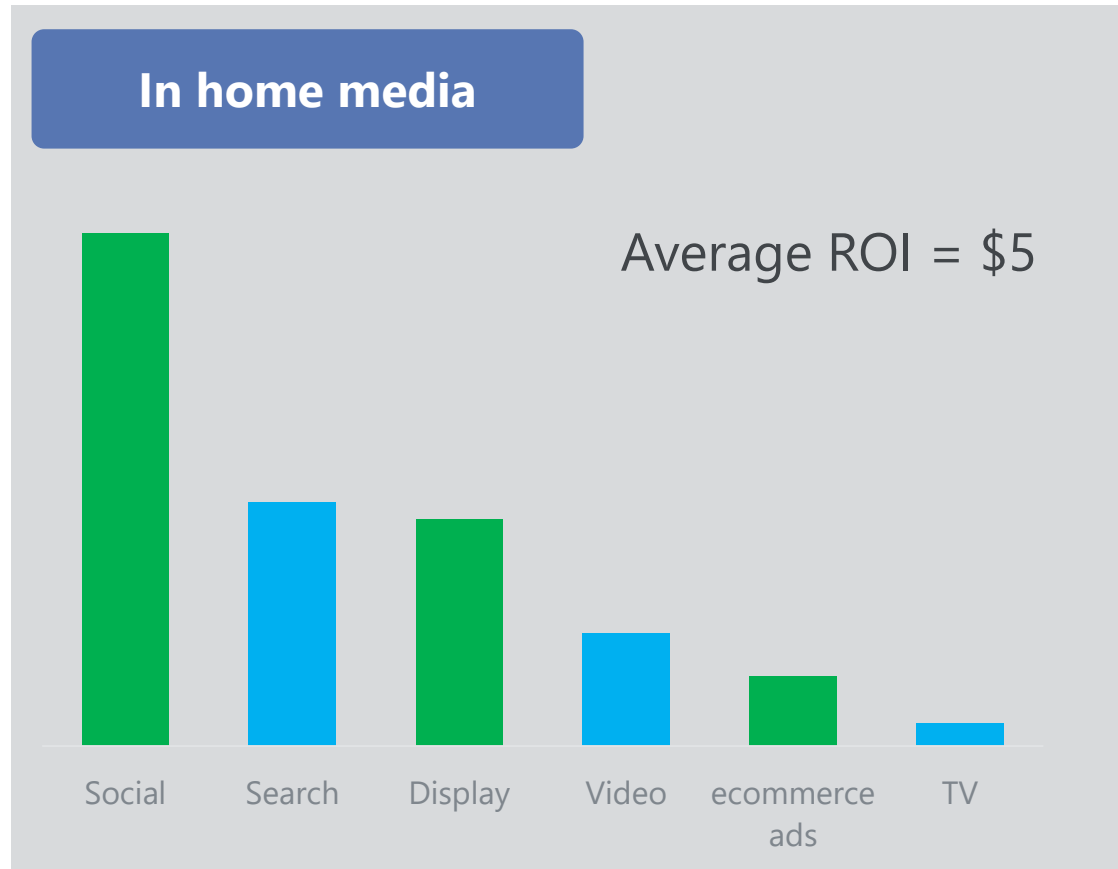


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The distinction
between in-home
vs out of home
marketing drivers
may be critical in
times like these...



In-home media more effective than out of home media

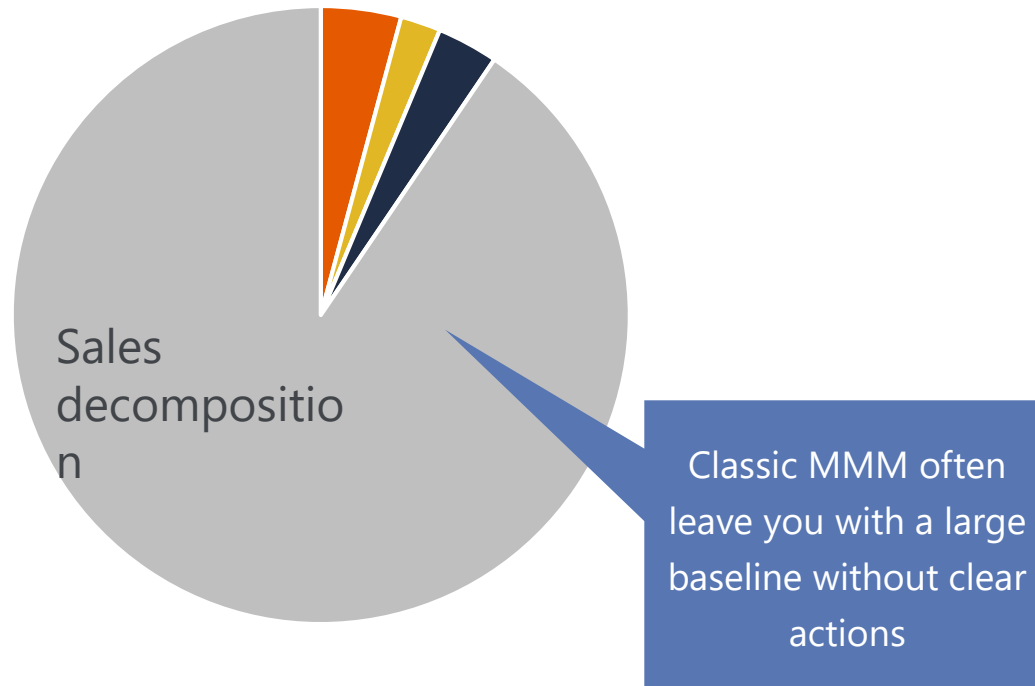


Source: GfK MMM benchmarks 2012-2019

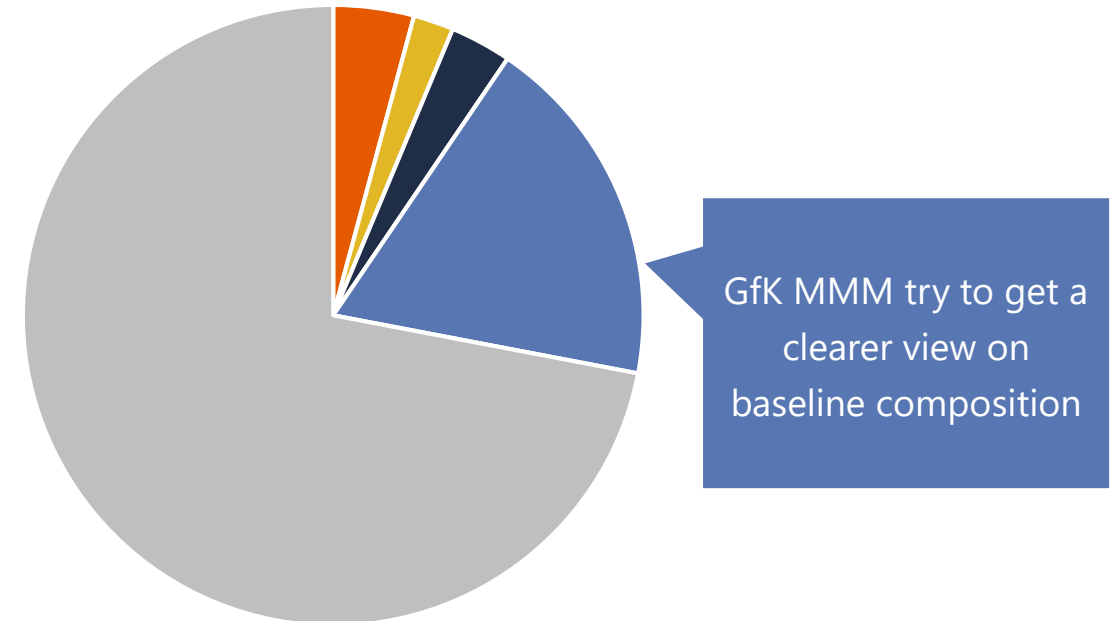
Don't neglect the brand effect conferred by marketing!



CASE STUDY FROM THAILAND MDA



- Price reductions
- Instore Promotions
- ATL Spending
- Base

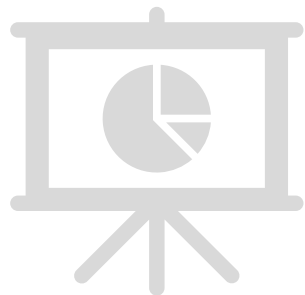


- Price reductions
- Instore Promotions
- ATL Spending
- Brand Impact
- Base

Brand effect of in-home marketing also beats out of home effects

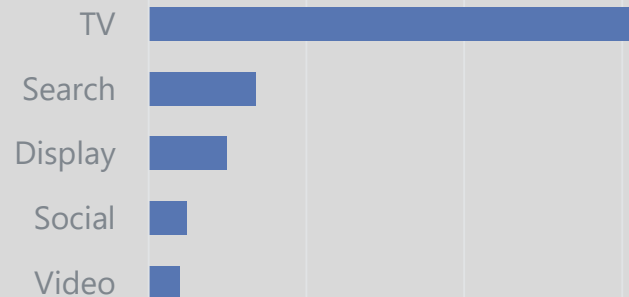
Averages from 2019 studies

17.1
% average result
of Brand Proxy to sales
in available case studies



Brand effect (indirect effect on sales)

In home media



Out of home



ROI multiplier when integrating brand effects

Higher Multiplier

TV
Social
Online Video

Medium Multiplier

Paid Search
Display

Lower Multiplier

OOH
Cinema

Source: GfK Analytics MMM with brand effect modeling.



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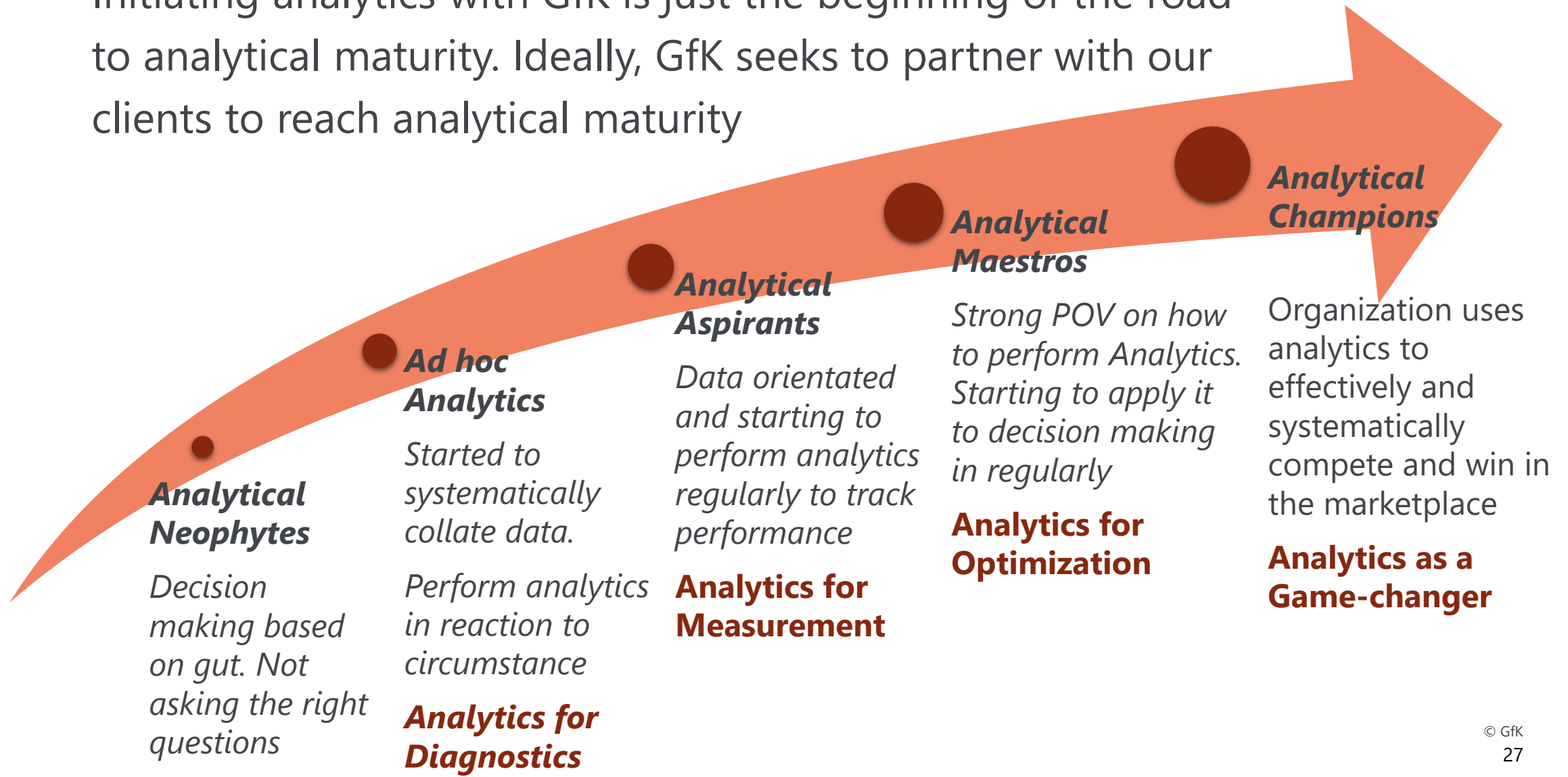
GfK Marketing Mix Modelling



Stages of Analytical Evolution



Initiating analytics with GfK is just the beginning of the road to analytical maturity. Ideally, GfK seeks to partner with our clients to reach analytical maturity



Running an MMM Model

GfK may blend in GfK POS data for TCG clients and drive model robustness

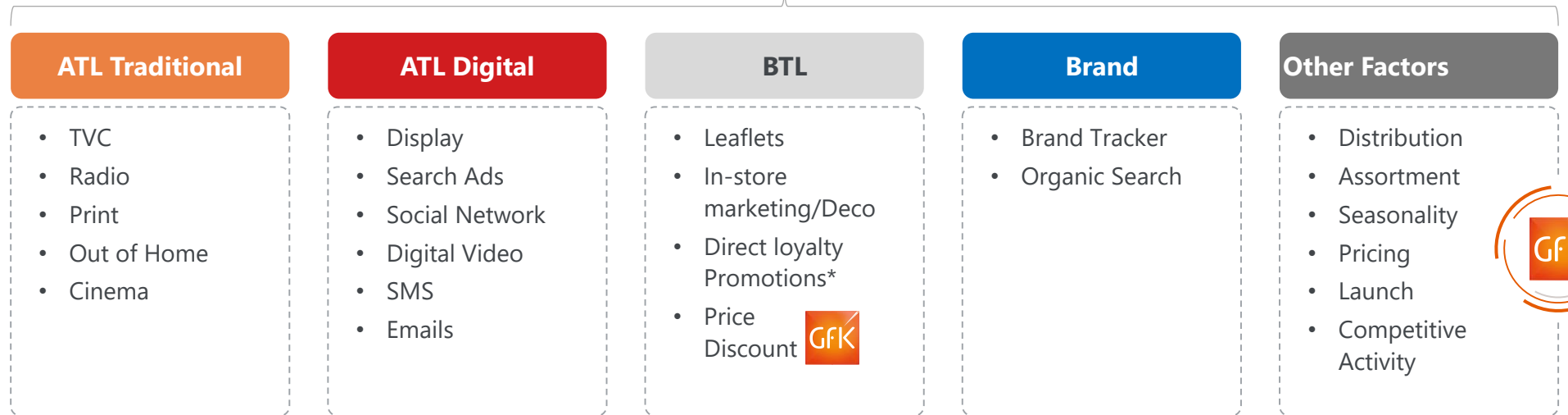


Dependent Variable



f

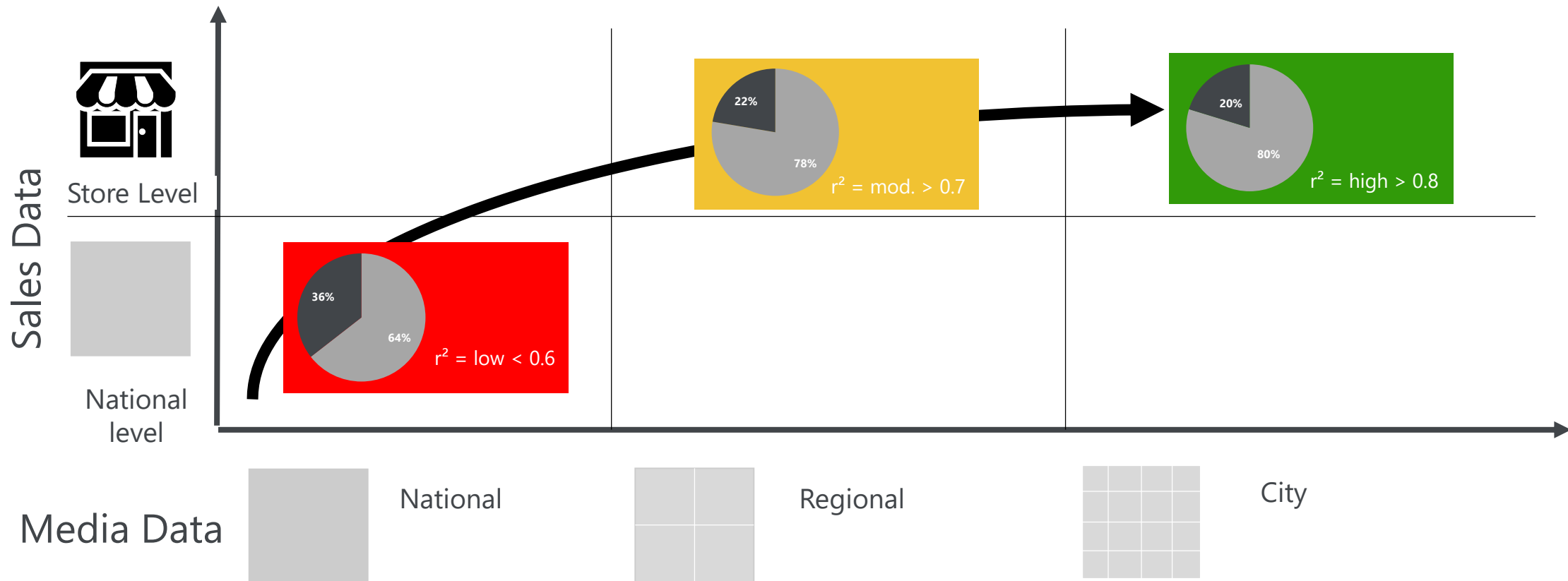
Independent Variable



Multivariate Linear Regression Model

$$Y_t \text{ (Sales)} = b_k \text{ (ATL Traditional)} + b_k \text{ (ATL Digital)} + b_k \text{ (BTL)} + b_k \text{ (Brand)} + b_k \text{ (Other Factors)}$$

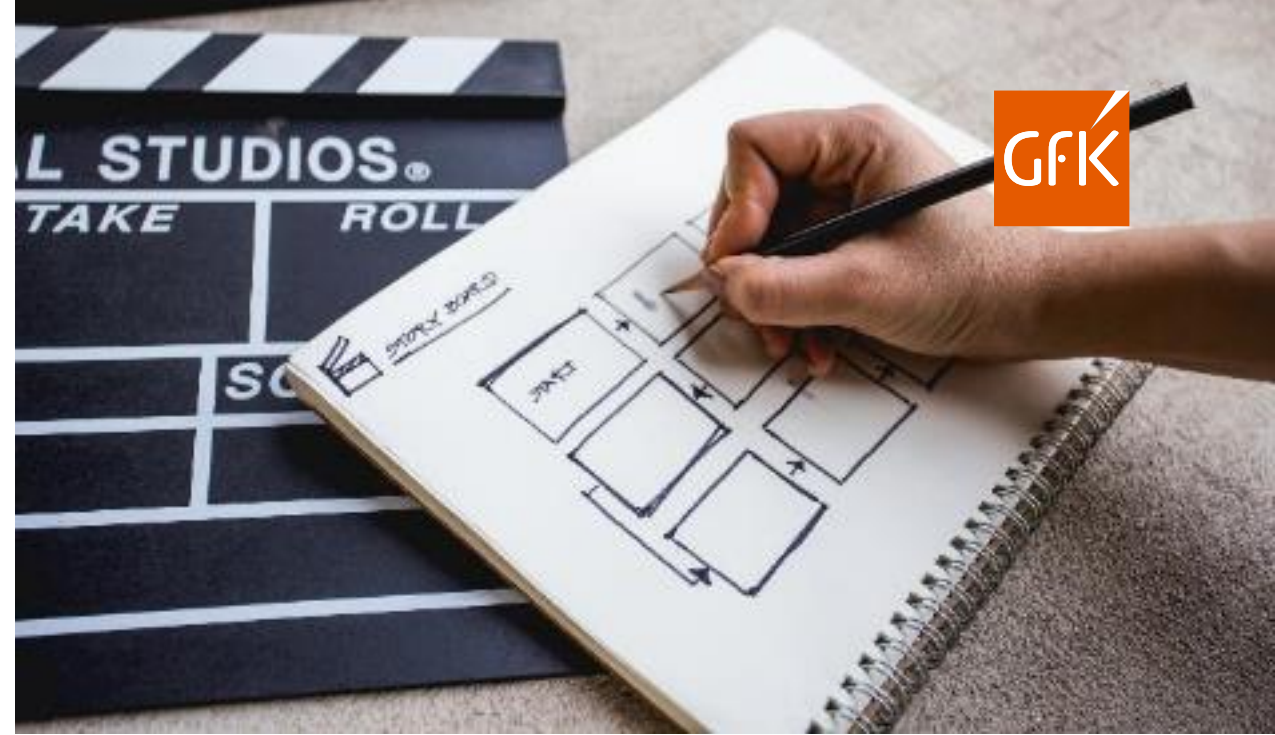
We believe that the combination of GfK data sets on city level together with highly regionalised media data deliver best model results



Case study in Europe with a leading digital media platform and a leading brand in consumer electronics. Three MMM models run with different data sets

”

We have partnered with various clients to perform about 200 MMM in the last years



Across our client portfolio we have seen potential improvement of 2- >10% (sales units) when optimizing based on MMM findings



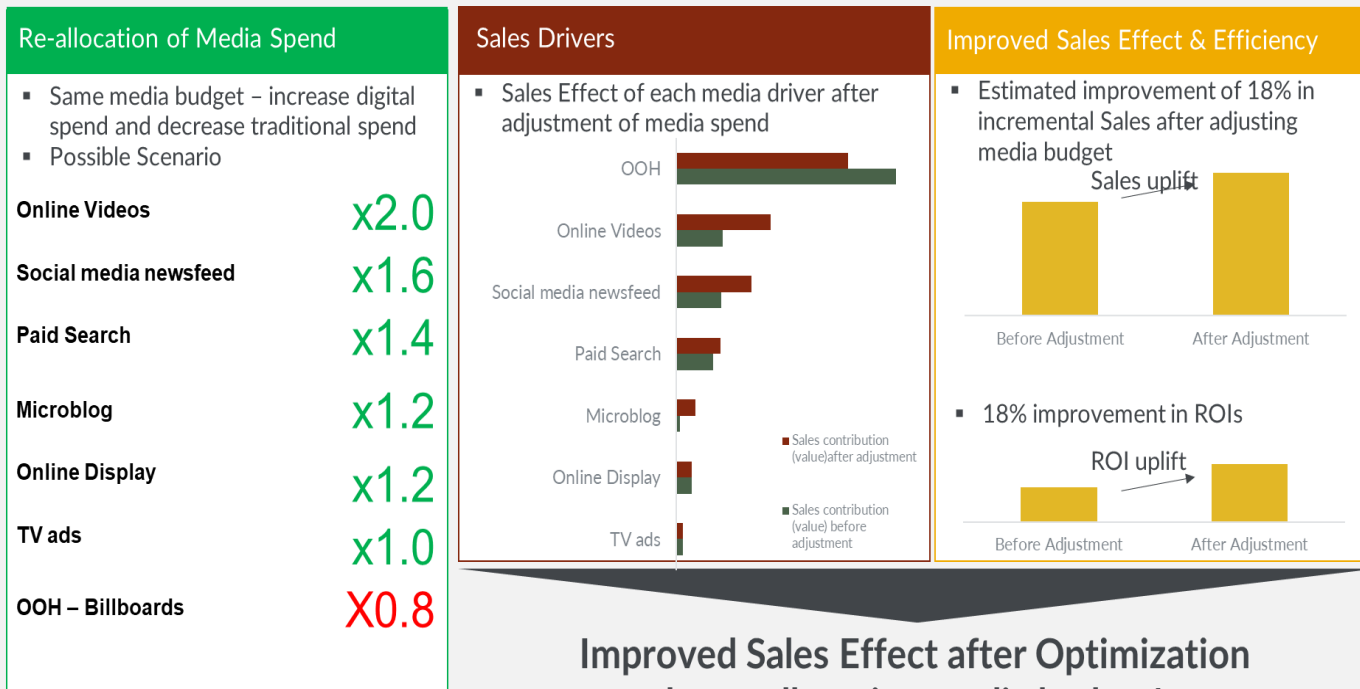
Optimization for Performance



Re-allocate your media budget via simulations based on our Marketing Mix Models

CASE STUDY FROM TAIWAN SMARTPHONE MARKET

Media budget re-allocation assuming no change in budget



Improved Sales Effect after Optimization
by re-allocating media budget!

Key Benefits from running an MMM

- 1 Adopt a data driven approach to decisioning
- 2 Identify drivers and barriers to commercial success from marketing activities
- 3 Set targets for commercial success and simulate how you can achieve those targets
- 4 Plan for the future and make changes to your media budget allocation
- 5 Execute revised marketing plans

The GfK MMM Value Proposition



1

Modelling against business outcome

- GfK sell out sales data as a modelling input has a stronger link to marketing activity (as opposed to sell-in data)
- GfK data contains detailed, price, assortment and competitive info
- Test effects on both online and offline sales

2

Modelling at the level of execution

- GfK's unique store level / retailer level data enable us to model at a sub-national level
- Aggregate level modelling may produce misleading / incomplete results

3

Models guided by neutrality & norms

- No agenda in budget allocation across mechanics or spending overall
- Norms by individual media mechanics in terms of sales effect and ROIs

4

Models built by expert econometricians and best in class techniques

- Consumer durables are different from other categories – we account for this in our models
- Years of international and category expertise measuring and optimizing the full effects of marketing
- Experts at dealing with challenges of media fragmentation and evolving business KPIs



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