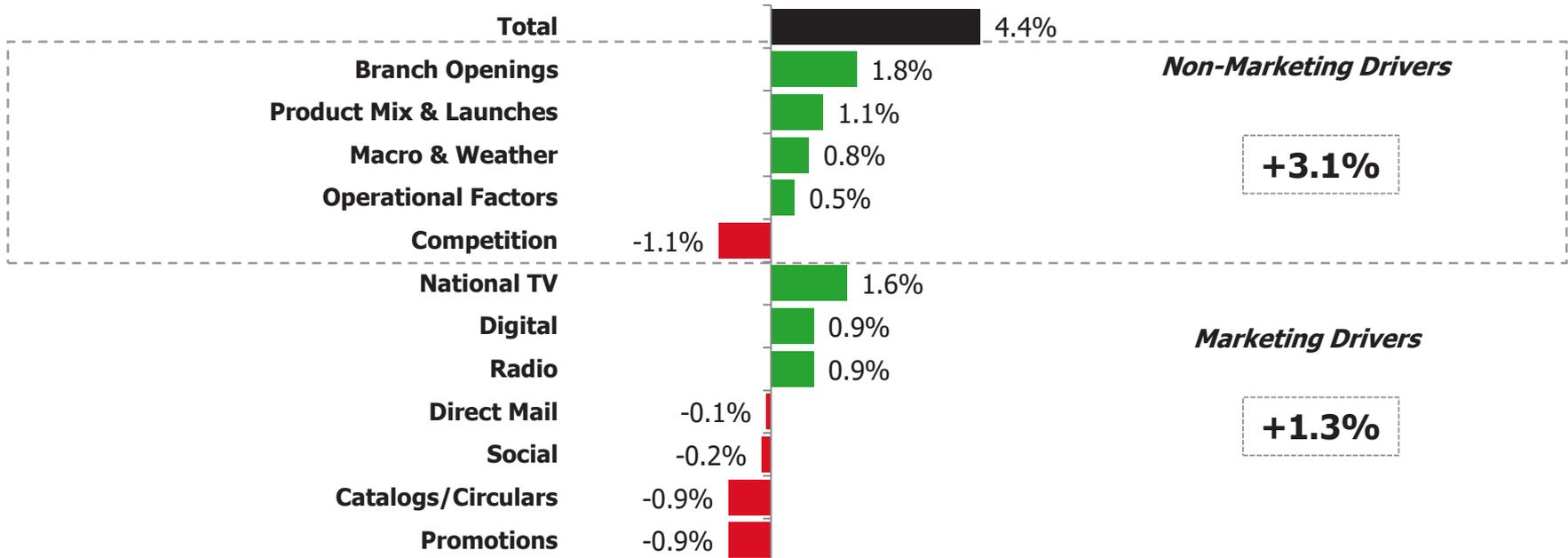# Introduction to Analytic Partners
May 13, 2019

Business Drivers; Identifying Drivers of Growth or Decline

Client X – Net Sales Change – Current year vs. last year
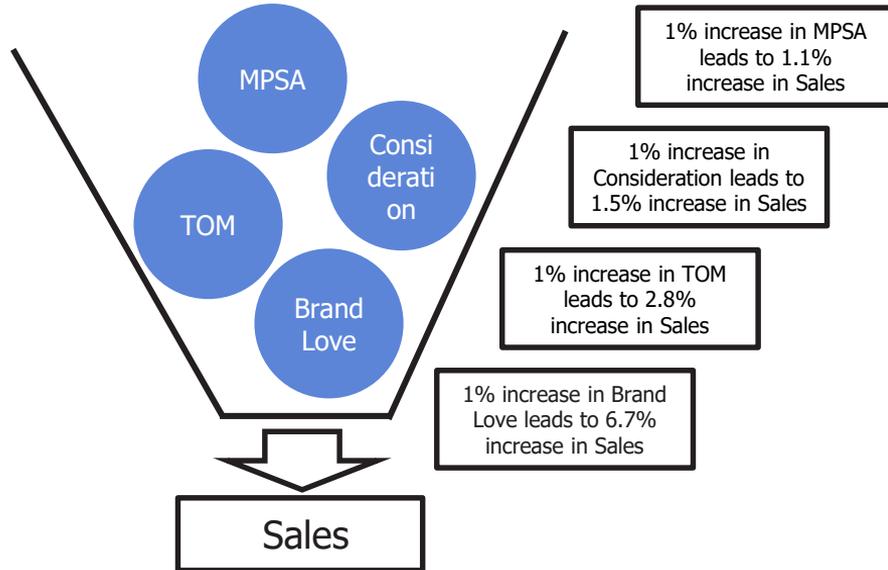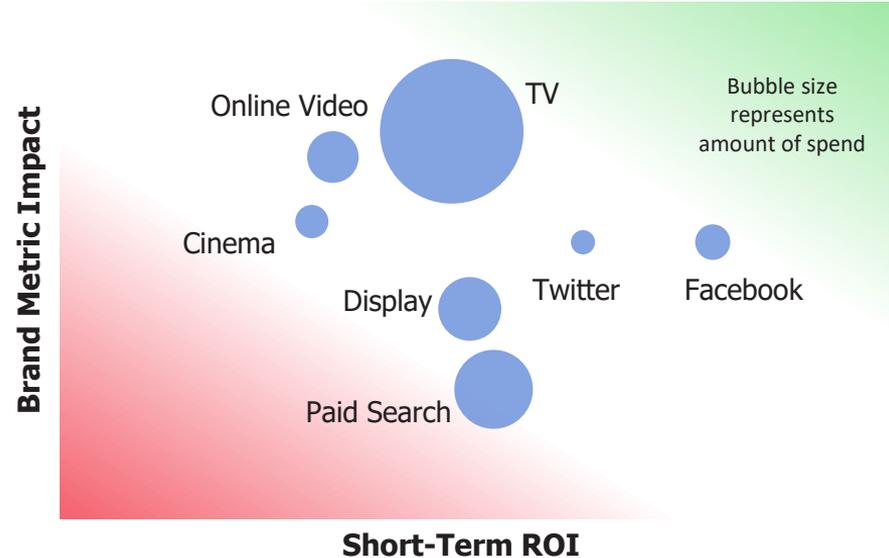
Net Sales % Change

Total	4.4%
Branch Openings	1.8%
Product Mix & Launches	1.1%
Macro & Weather	0.8%
Operational Factors	0.5%
Competition	-1.1%
National TV	1.6%
Digital	0.9%
Radio	0.9%
Direct Mail	-0.1%
Social	-0.2%
Catalogs/Circulars	-0.9%
Promotions	-0.9%

Non-Marketing Drivers

+3.1%

Marketing Drivers

+1.3%

Analysis will Include Brand Impacts and Recommendations to Complement Short-Term Sales Impacts

ANALYTIC PARTNERS

▶ In the example below, Facebook has strong short-term ROI but lower impact on brand metrics vs. Video
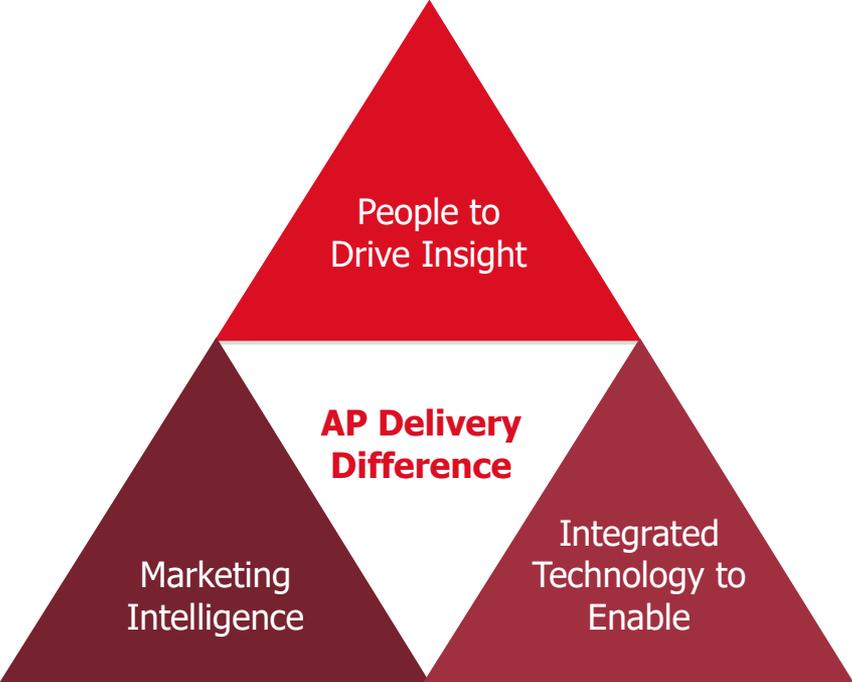
Brand & Revenue Relationship

MPSA

Consideration

TOM

Brand Love

1% increase in MPSA leads to 1.1% increase in Sales

1% increase in Consideration leads to 1.5% increase in Sales

1% increase in TOM leads to 2.8% increase in Sales

1% increase in Brand Love leads to 6.7% increase in Sales

Sales

Short-Term ROI & Brand Impact

Brand Metric Impact

Online Video

TV

Cinema

Display

Twitter

Facebook

Paid Search

Bubble size represents amount of spend

Short-Term ROI

Analytic Partners Background

Analytic Partners: Introduction

Independent, Strong Legacy with Global Expertise

ANALYTIC PARTNERS

Independent
privately-held
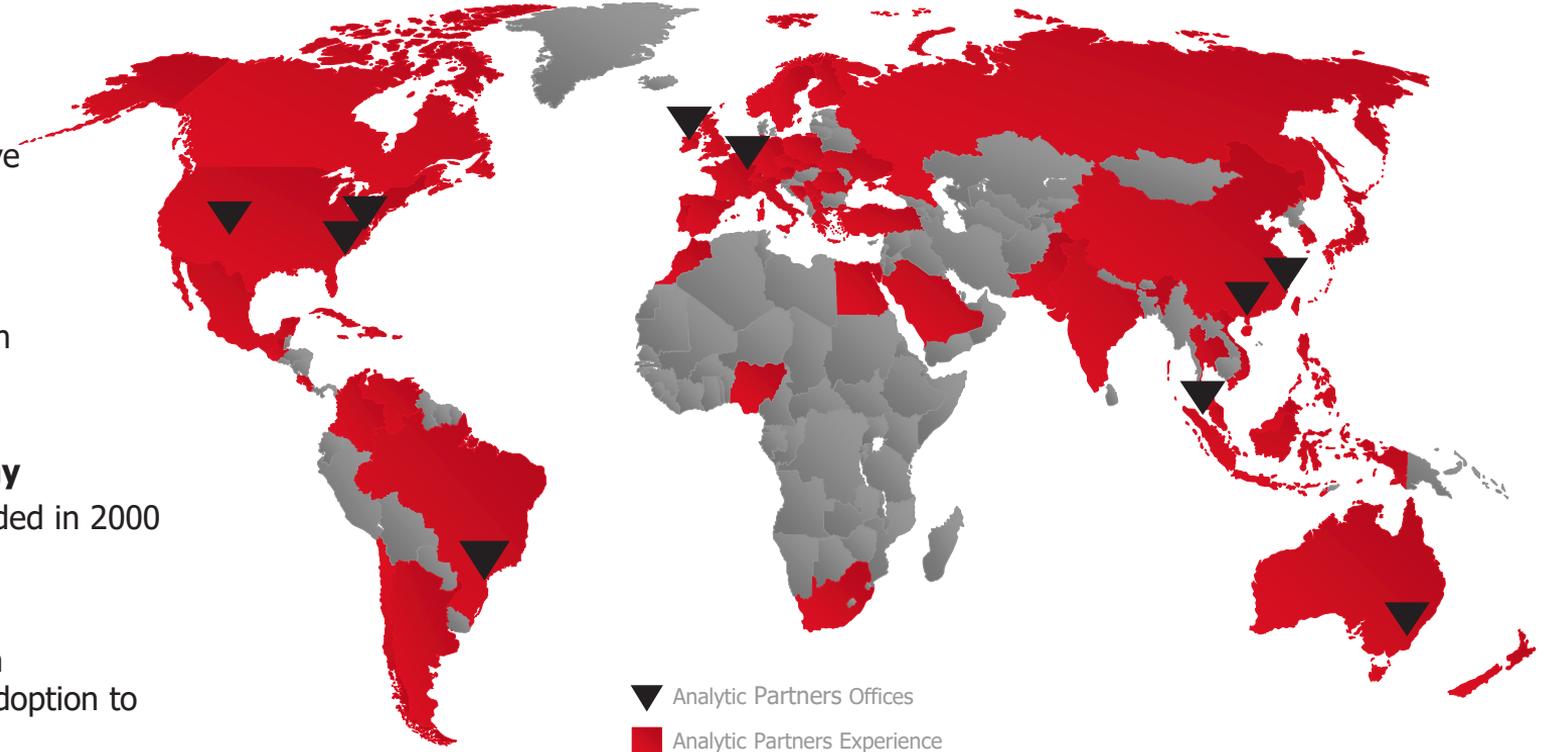unbiased perspective

Long-term partnership view
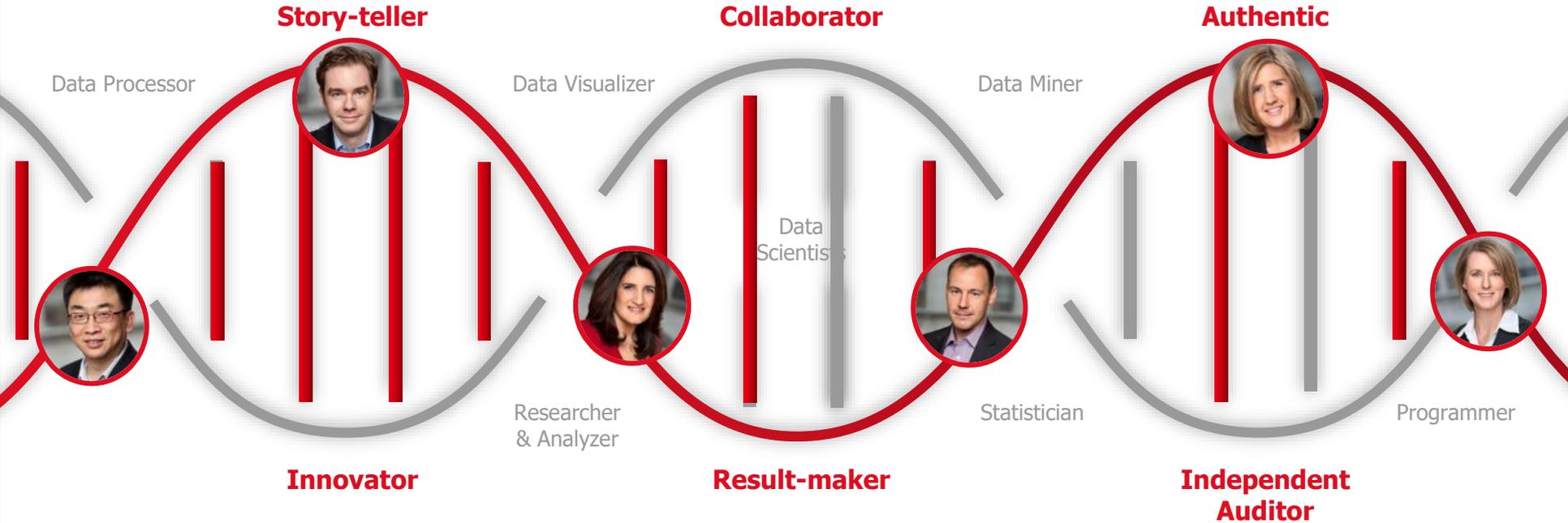90% client retention

Global marketing analytics company
strong legacy, founded in 2000
10 Global offices

Solely focused on
Enabling Analytic Adoption to Unlock Potential

▼ Analytic Partners Offices

▮ Analytic Partners Experience

Our Value Proposition Starts With Our People

Story-teller

Data Processor

Data Visualizer

Collaborator

Data Miner

Authentic

Data Scientist

Innovator

Researcher & Analyzer

Result-maker

Statistician

Independent Auditor

Programmer

Perfectly Balanced Between Services & Tools

Talent

► Elite Service

► Objectivity

► Empowered

GPS Enterprise

Technology

► Adaptable

► Transparent

► Scalable

Analytic Partners Solutions – Breadth of Offerings

Strategic Consulting

- ► Change Management
- ► Brand Equity
- ► Strategic Pricing
- ► Analytics Training
- ► ROI Genome – Beyond Benchmarking

Marketing Analytics

- ► Marketing Mix Modeling
- ► Customer Loyalty
- ► Sales Forecasting
- ► Competitive "War Gaming"
- ► Weather-effects Planning
- ► Digital & MTA Attribution
- ► Customer Journey Analytics
- ► Price & Promotion Analytics
- ► Customer Franchise Value
- ► Omni-channel optimizations

Tools & Technology

- ► Manage Data
- ► Analyze & Visualize
- ► Model Construction
- ► Track & Monitor
- ► Plan & Forecast
- ► Optimize

Analytic Partners Continuous Learning – Internal and External

NorthStar Academy

Educate   Empower   Enable

Client Learner Portal

Charting Our Course To Business Results

Using Best In Globe Marketing Analytics

Industry Recognition & Experience

- ► **Leader in the Forrester Wave**: Marketing Measurement and Optimization Q2 2018
- ► **Only Leader in Forrester Wave**: Marketing Measurement and Optimization, Asia Pacific Q4 2018

- ► **Recognized for Marketing Mix & Attribution in Market Guide**
- ► **Recognized for Building Segments & Personas** for Digital Marketing

- ► **2017 Smart Data Agency of the Year** for leveraging value from data to help clients achieve competitive advantage
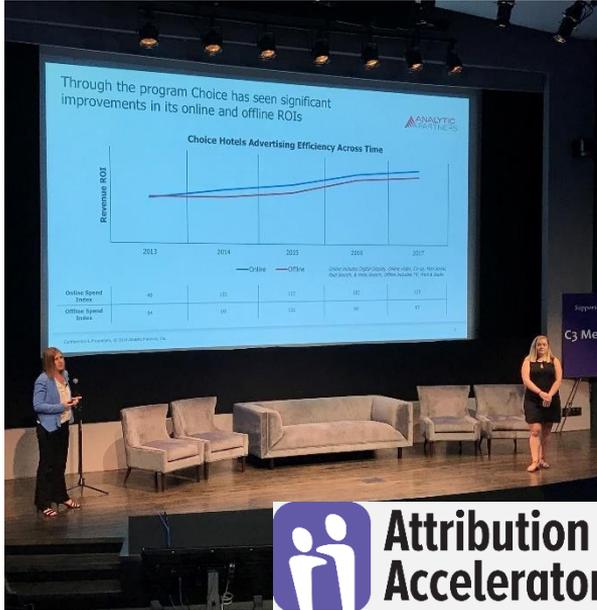- ► **Winner of Intel Challenge Hackathon**

- ► **2018 Genius Award for Data & Analytics Storytelling** awarded to Scotts Miracle-Gro for their use of Analytic Partners' Helio solution

Industry Recognition & Thought Leadership

GPS Enterprise Modules: 6-in-1 Solution Suite

AMP
Modeling Platform

Business Tracking and Metric Reporting

PLANNER
Strategic | Tactical

Media simulations and multi-KPI optimization
Granular, site / keyword level digital
optimization

PROPHET
Portfolio Optimization

Portfolio Optimization across multiple
dimensions

Genome
Intelligent Benchmarks

Performance Benchmarks
Modeling Best Practices and Guidelines

Introspect
Big Data Platform

Big data Attribution platform
Customized dashboard and metric reporting

ADAPTA
Data Management

Data management platform for extracting,
loading, and transforming data feeds

AP experience and tools enable aggregation, cleansing and synthesizing data in multiple formats across campaigns

Adapta: Streamlined Data Management

Driving Action from Insights: GPS Enterprise – Model Transparency

► GPS-E provides full transparency into models, statistics & validation. Based on level of expertise, clients can view models, shadow modelers or are involved in modeling process.
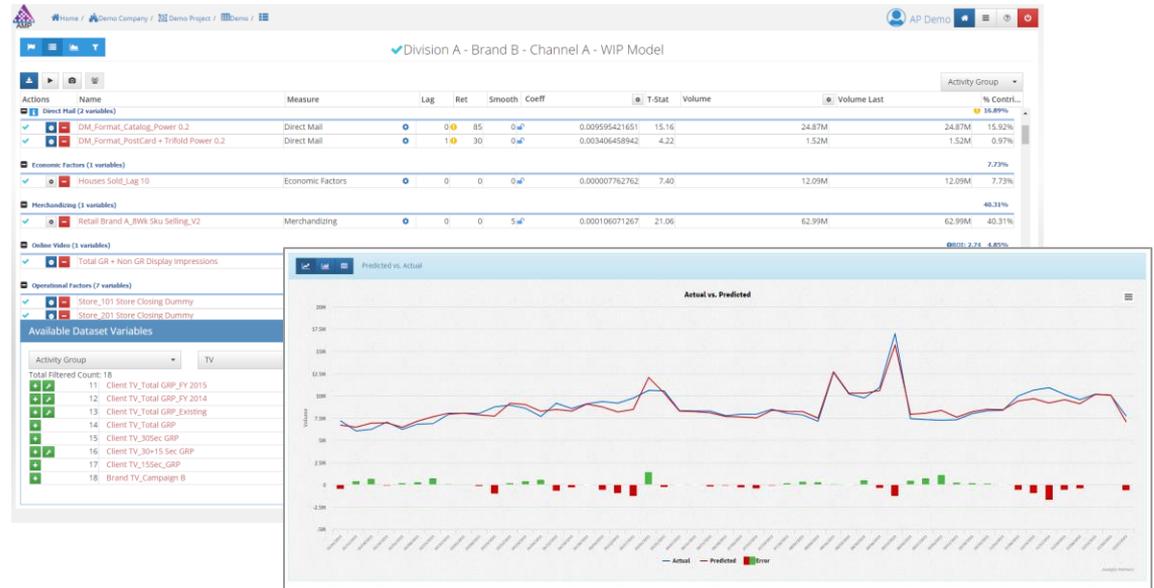
GPS Enterprise: Planning & Optimization Tools

Simulation – User inputs changes to marketing spend or assumed performance

GPS Enterprise

ANALYTIC PARTNERS

User makes a change to spend, activity, or KPI/Spend (ability to add new activities)

Driver	Activity		Spend		KPI / Spend		Action
Standard Display	541,014,907 459,862,671	▼ -15.0%	$3,340,046 $2,839,039	▼ -15.0%	$1.34 $1.34	0.0%	
Direct Mail	68,151,927 68,151,927	0.0%	$38,308,679 $38,308,679	0.0%	$0.79 $0.79	0.0%	
Print	79,543,279 79,543,279	0.0%	$6,306,181 $6,306,181	0.0%	$1.06 $1.06	0.0%	
Promotional TV	6,478 6,478	0.0%	$15,483,290 $15,483,290	0.0%	$2.35 $2.35	0.0%	
Branding TV	5,543 6,097	▲ 10.0%	$17,554,950 $19,310,445	▲ 10.0%	$0.65 $0.66	▲ 1.5%	

Output

Summary   Waterfall Charts   Due to Charts   Details

Select Metric to View Chart: KPI   ☑ Include base in charts

KPI – Waterfall   KPI: Acquisition

520M

500M $490,794,271   −$673,117 $0 $0 $0 $0 $0 $0 $0 $0 $0 $1,287,037 $491,408,192

480M

460M

Base Period   Standard Display   Social Video   Print   Promotional TV   E-Blast   Paid Search   Direct Mail   Dynamic Display   Online Video   Promotions   Social Display   Branding TV   Forecast Perio

Visualize impact to the business

Optimization – Reallocating spend across tactics

User sets budget and constraints by tactic (ability to weight by different KPIs)

Visualize impact to the business in total or by tactic

GPS Enterprise – Tools to Enable Planning & Optimization

Holistic Business Planning

Tactical Digital Planning
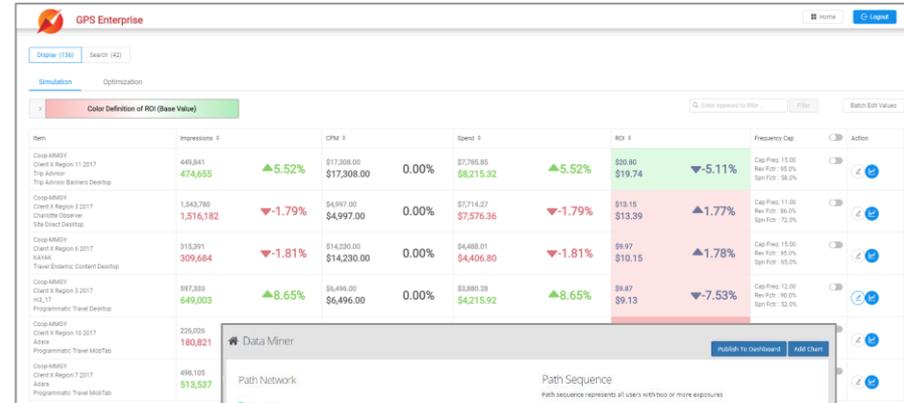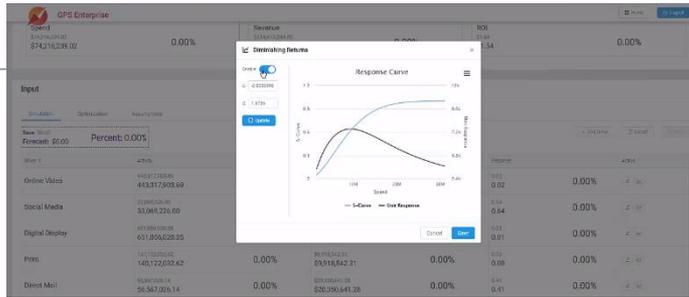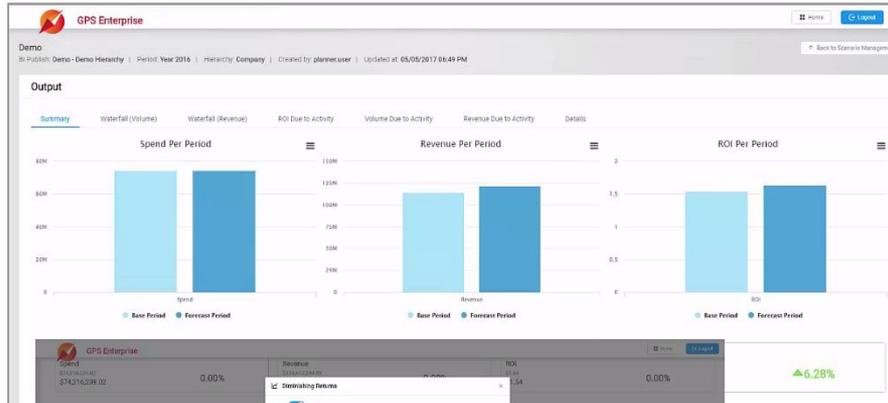
Granular MMM enables further insight into marketing execution and optimization opportunities

Diminishing Returns

Brand X
Direct Mail ROI at Different Weekly Circulation Levels

Legend: Cumulative ROI, Marginal ROI

Marginal ROI values: $0.54, $0.64, $0.72, $0.78, $0.84, $0.89, $0.94, $0.98, $1.02, $1.05, $1.08, $1.11, $1.13, $1.15, $1.17, $1.18, $1.20, $1.21, $1.22, $1.22, $1.23

Current levels (at 24)

Untested Levels of Activity (37–43)

Y-axis (ROI): $0.00, $0.20, $0.40, $0.60, $0.80, $1.00, $1.20, $1.40, $1.60

X-axis (Weekly Circulation (MM)): 5, 7, 9, 11, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 31, 33, 35, 37, 39, 41, 43

Synergies

Client X
Response Index With TV
(100 = Response without TV)

Inserts	Paid Search	Online Video	Local Radio
118	129	114	109

Upside Opportunity

National TV
Response Improvement Opportunities

Current Performance	Airing at Optimal Levels	Daypart Mix	Synergy with OLV/Radio	Greater Mix of :15s	National vs. Local Buy	Potential Upside
1.38	0.08	0.13	0.24	0.29	0.35	2.47

Understanding How Tactics/Campaigns Impact Different KPIs

Driver of Overall Sales vs New Accounts

(Vertical axis) **Driver of New Accounts**

(Horizontal axis) **Driver of Overall Revenue**

Key Driver of change in Acquisitions

Key Driver of Change in Sales

Brand TV

Online Video

Satellite Radio

DRTV

Sponsorship Events

Facebook

Digital Display

Print
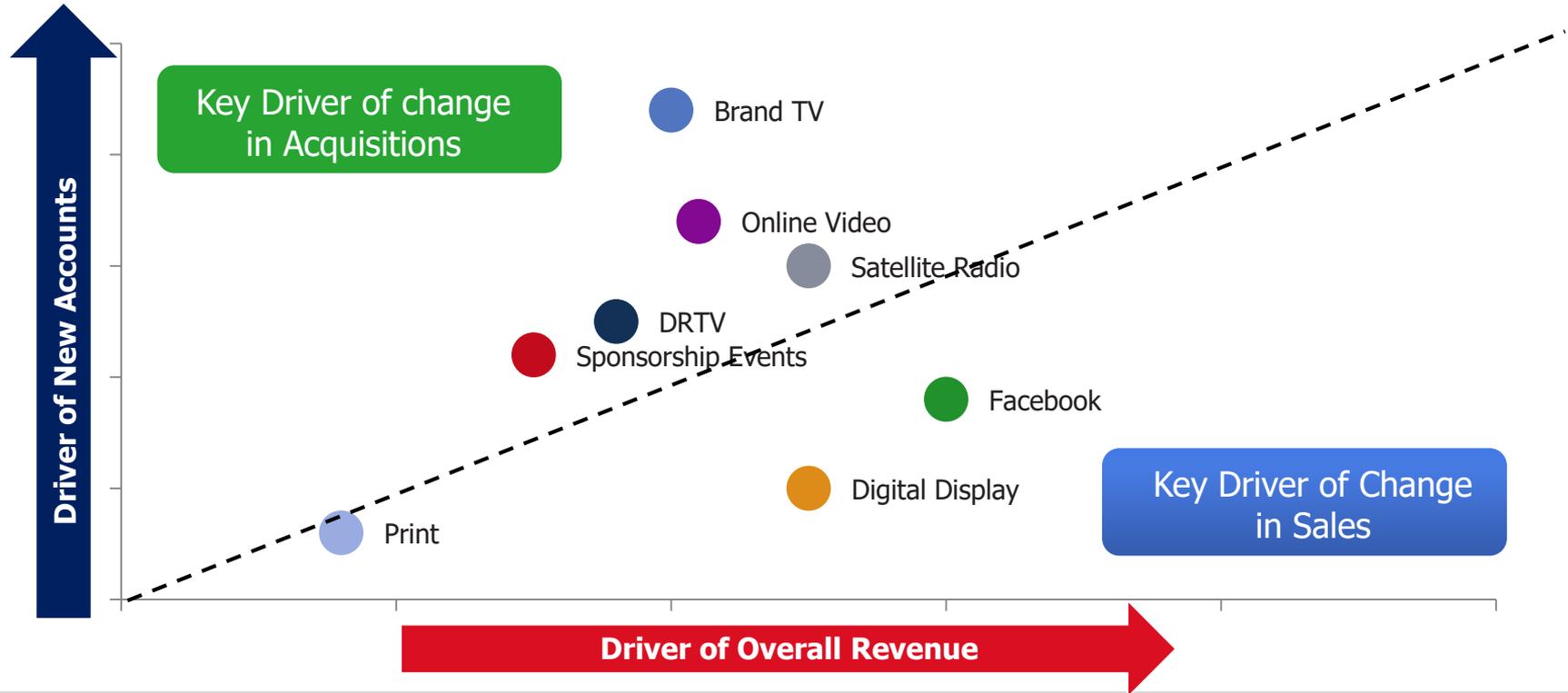
AP's Integrated Brand Impact Solution Insights Example

Short Term ROI complemented by Branding Impact by Channel and Campaign

Brand Health Impact vs. Short Term ROI

Monitor Spending
Prioritize
Campaign 3
TV
Bubble Size represents Paid Media Spend
Campaign 2
Campaign 1
OOH
Paid Social
Digital Video
Digital Display
Campaign 4
Reduce/Optimize
Optimize

LT Brand Health Impact Index
ST ROI Index
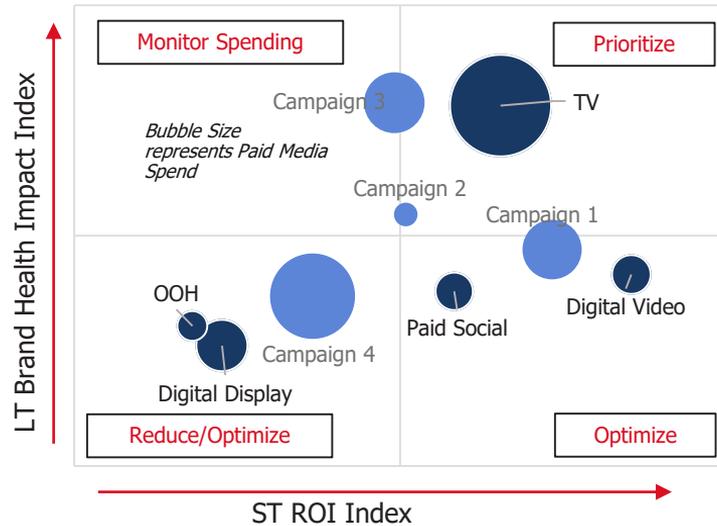
Message Recommendations for Impact on Brand

Imagery Characteristics Impact on Brand

Trust
Proud
Lifestyle
Reputation
Comfort
Simplify
Features
Flexible
Community
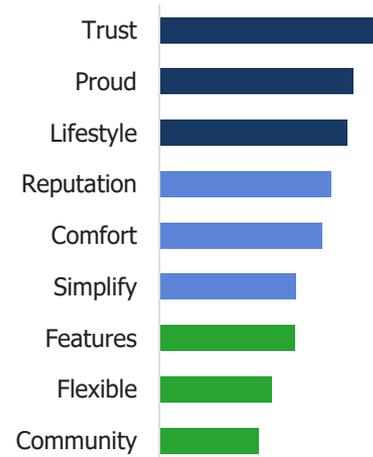
Recommendations:

1. Invest in TV for short and long-term brand performance

2. Prioritize video over display for short & long-term gains

3. Long-Term Brand building messaging should focus on Trust, Proud, Lifestyle attributes

Deep digital insights – e.g. Paid Search efficiency by Keyword

ANALYTIC PARTNERS

Paid Search Performance by Keyword Type

Legend:
- Tax Season (light blue)
- Brand (red)
- Non-Tax (dark blue)

	Incr. Accounts per M Clicks	Incr. Accounts per Spend	CPC	Spend ($'000)	Total Spend ($'000)
A			$8.42	$219	$529
B			$16.24	$947	$2,651
C			$14.69	$896	$2,476
Brand			$8.86	$1,341	$3,667
A			$12.41	$3,241	$4,928
B			$12.58	$1,642	$3,983
C			$6.99	$574	$1,205
D			$10.02	$514	$1,111
E			$7.99	$442	$919
F			$9.68	$940	$1,616
G			$6.26	$75	$120
H			$18.09	$1,689	$3,695
I			$13.31	$3,452	$7,412
J			$7.77	$528	$1,055
K			$9.27	$94	$154

Depth of Insight within each Marketing Lever

ANALYTIC PARTNERS

Daypart

TV Response Index by Daypart

Legend: ■ Response Index ■ Cost Index ■ Efficiency Index

Daypart	Response Index	Cost Index	Efficiency Index
Overnight	82	47	175
Morning	69	89	78
Daytime	116	87	134
Early Fringe	132	96	137
Prime Time	92	150	61
Late Night	95	131	73

Average = 100
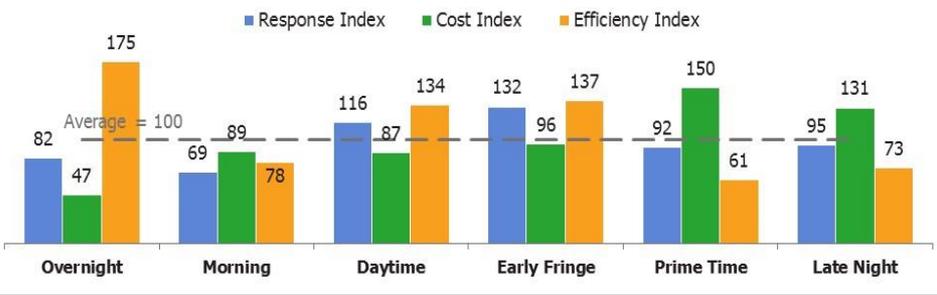
Buy Type

TV Response Index by Network Buy Type

Legend: ■ Response Index ■ Cost Index ■ Efficiency Index

Network Buy Type	Response Index	Cost Index	Efficiency Index
Audience Buying Linear	93	68	140
DRTV Cable	138	139	102
National Early Morning	19	71	28
National FIXED Cable	140	113	128
Syndicated	109	110	102

Average = 100
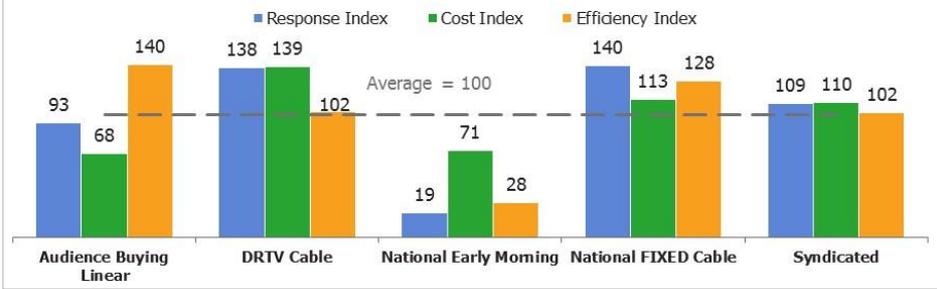
Campaign

Response by TV Commercial
Response Index per 100 GRPs

Response Index

	Commercial A	Commercial B	Commercial C	Commercial D	Commercial E	Commercial F	Commercial G
Response Index	115	125	75	88	129	114	140
Message:	Promo	Promo	Brand	Brand	Brand	Promo	Promo
ROI:	$2.60	$1.89	$1.42	$1.88	$1.59	$1.43	$2.22

Analysis is Measured by Creative, With Insights Showcasing How Message Focus Impacts Direct & Halo Effects

ANALYTIC PARTNERS

► Example opportunity: Shifting 15% of Demand support to Supply could drive an additional $5MM in revenue on the same spend

Client X
TV ROI by Message Focus

Message Focus	
Supply	
Demand	
Equity	

Client X
% Direct vs. Halo ROI by Message Focus

■ Impact onto Demand   ■ Impact onto Supply

	Demand	Supply
Supply	15%	85%
Demand	70%	30%
Equity	55%	45%
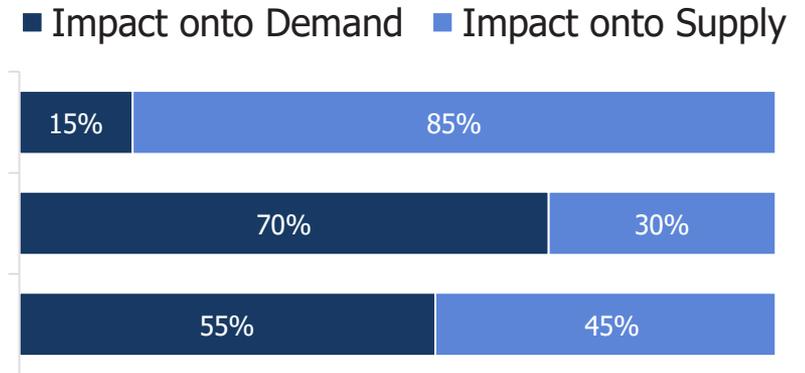
Long-Term Impact of Media: Cutting Paid Media spending can be damaging to the brand over time

ANALYTIC PARTNERS

Implications of Cutting Paid Media Support

▶ Eliminating Paid Media spending erodes base business over time

▶ Cutting Paid Media impacts Brand Health which leads to long term Sales losses

Case Study Brand X Baseline Erosion over Time Without TV

ROI GENOME

Legend: ■ Base Volume ■ TV Adstock

F13 F14 F15 F16 F17

-2%   -11%   -10%   -15%

Last Dedicated TV Campaign

Y-axis left: Volume – Unit Sales (0 to 1,000)
Y-axis right: TV AdStock (0 to 800)
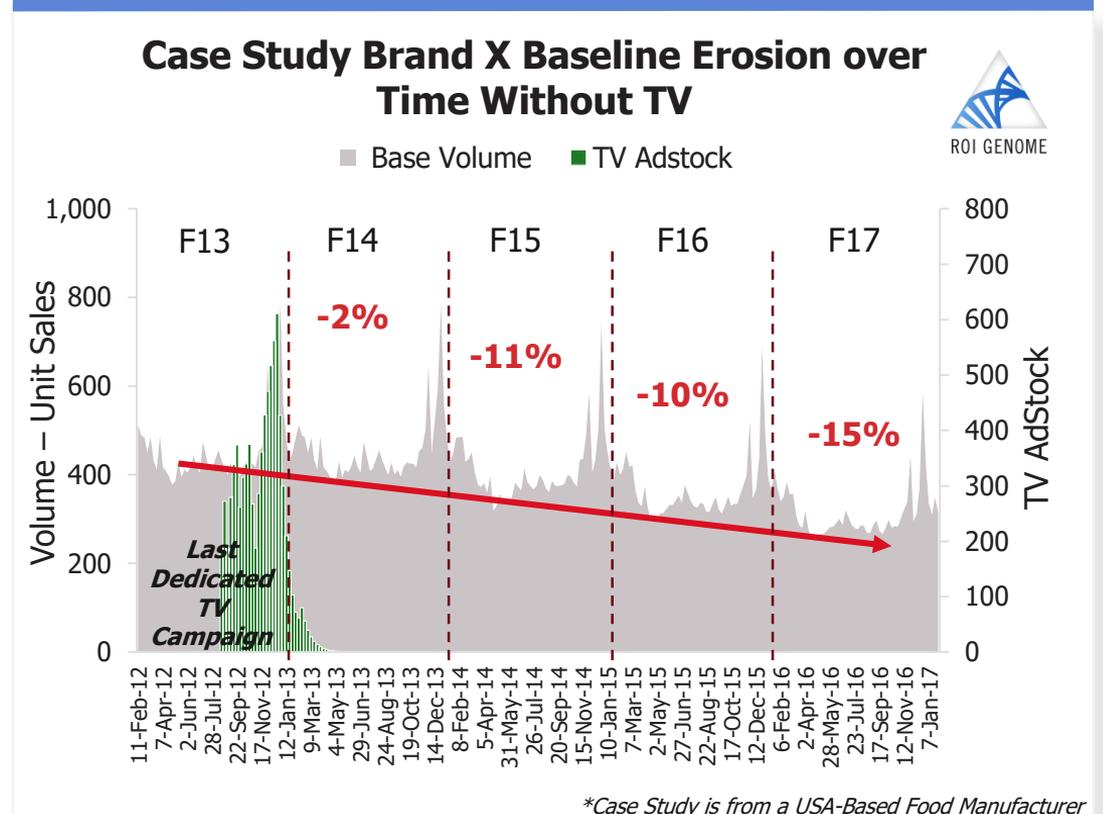
Case Study is from a USA-Based Food Manufacturer

27

Partnerships Focus: Expansion and Customer Experience

Expanded coverage

Enhanced activation

Customer experience

Analytic Partners Delivers Speed and Depth of Insight Through Measurement Partnerships

Facebook Measurement Partner

► One of the first Facebook MMM Partners

► Provides direct access to enhanced data feeds

► Analytic Partners can provide an even clearer picture of overall marketing programs to improve performance and effectiveness
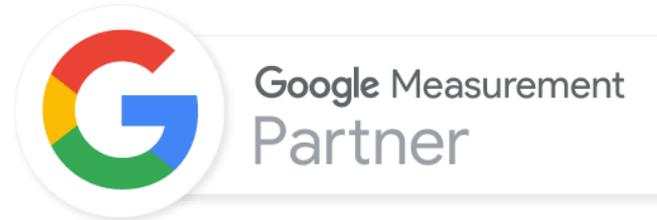
Google Measurement Partner

► Access to display, search and video campaign data in a standardized format

► Helps advertisers compare Google campaign spend and performance to other channels, such as TV, print and other digital platforms

► Deeper insights across all of Google's advertising channels

Granularity of data available from AP partnership with Google
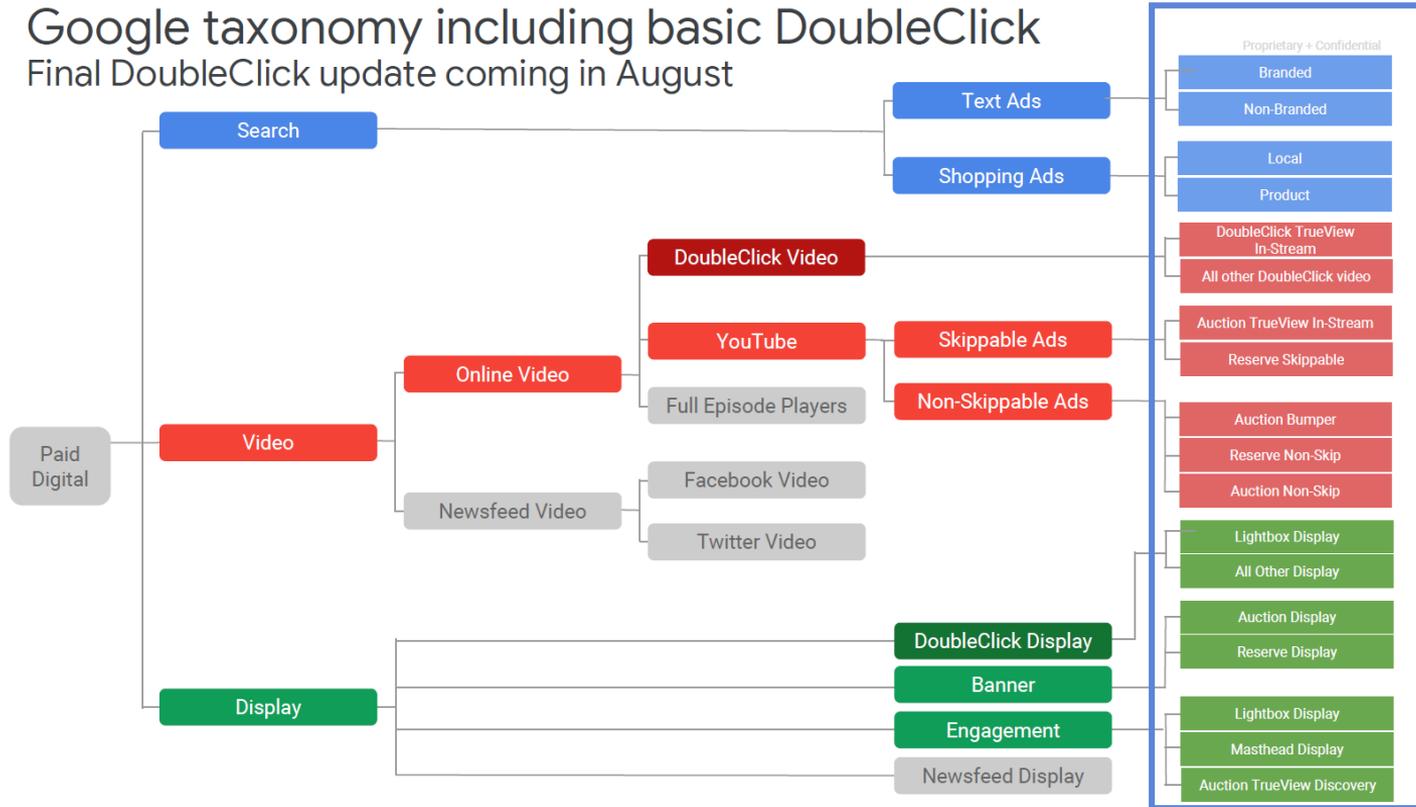
Similarly with Facebook, we have access to significant granularity of data
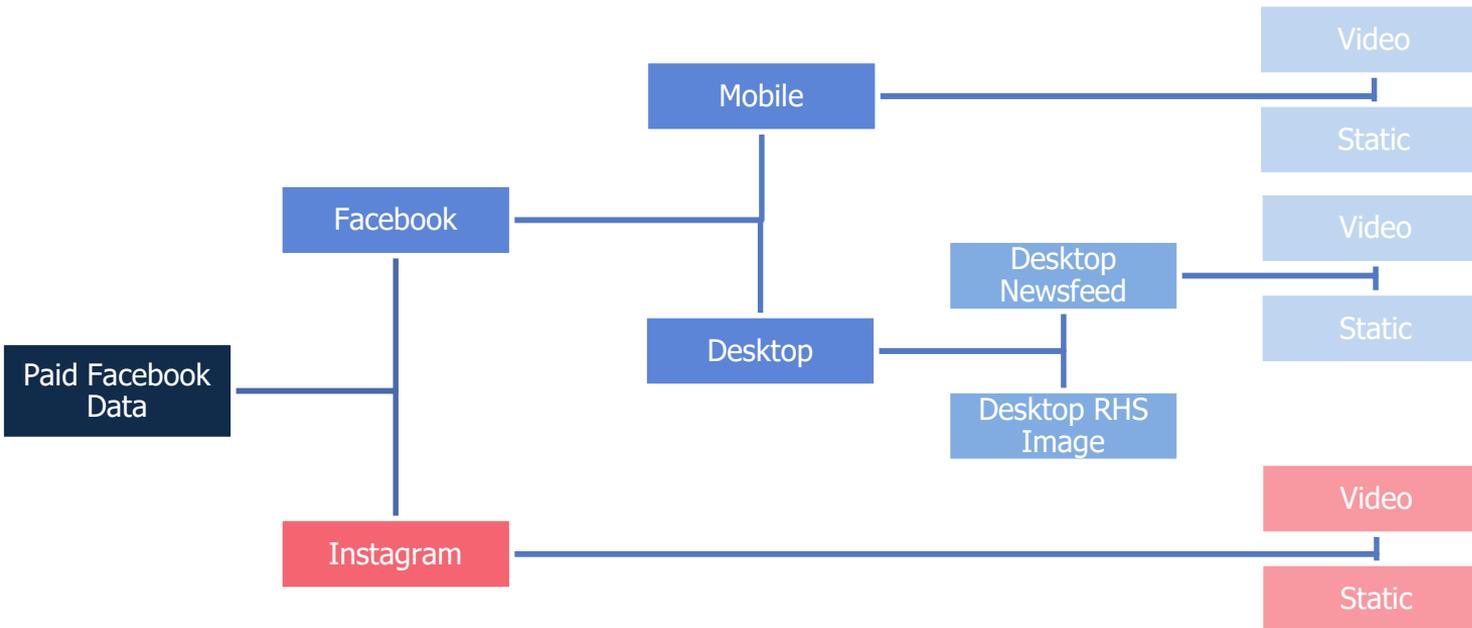
Example granular MMM results: Facebook, Instagram, You Tube

ANALYTIC PARTNERS

Paid Facebook Short Term **Response** By campaign

	Build Audience	Drive Conversions	Reengage	Shadow
	49	55	92	236
YTD 2017 Spend ($MM)	$1.6	$2.8	$0.9	$1.2
CPM	$2.39	$2.45	$2.81	$10.51

Paid Facebook Short Term **Efficiency** By campaign

Build Audience	Drive Conversions	Reengage	Shadow
$5.34	$4.01	$9.18	$6.67

Paid Facebook Audience Response

- ■ Prospecting
- ■ Retargeting
- ▨ Lead Gen

Index

	Prospecting	Retargeting	Lead Gen
Response Index	100	255	165
Cost/1K Imps Index	100	210	250
ROI Index	100	120	65
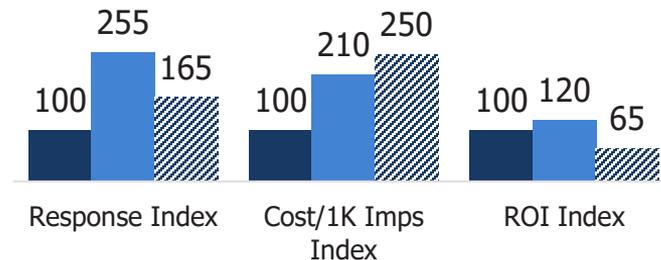
You Tube Efficiency Index by Product

Trueview	Bumper	Reserve Non-Skippable
100	264	280
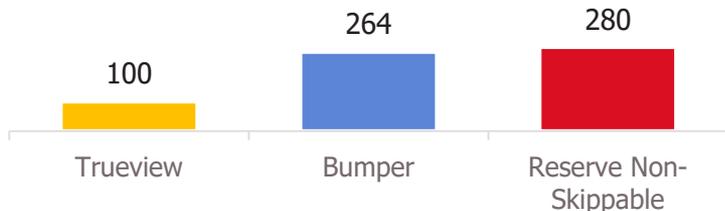
Response Index by Site

Instagram	Facebook
428	100

Instagram Response Index by Device

Desktop	Mobile
100	176

Instagram Response Index by Message

Type Z	Type Y
125	100

Analytic Partners Commitment to Confidentiality: No Logos

Services
Financial
Insurance
Technology
Telecom

Hospitality
Hotels
Travel
Restaurants

Retail
Brick & Mortar
Ecommerce
Specialty

Consumer Goods
Software & Technology
Electronics & Durables
Packaged Goods

Automotive
Manufacturers
Auto part suppliers

ROI Genome ™: "Beyond Benchmarking"

Insights to inform

▶ Hundreds of Billions in Marketing Spend Measured

▶ More Than 2 Million Marketing Metrics

▶ Global Footprint – 45+ countries

▶ 15 years, 700+ brands

▶ Cross-section of industries & tactics

▶ In depth understanding of marketing

   – Halo principles

   – Synergies and cascading impacts

   – Modeling considerations

ROI GENOME

Creating marketing wisdom from accumulated numbers and knowledge

ROI GENOME REPORT 2018 COMPILATION

FEBRUARY 2019
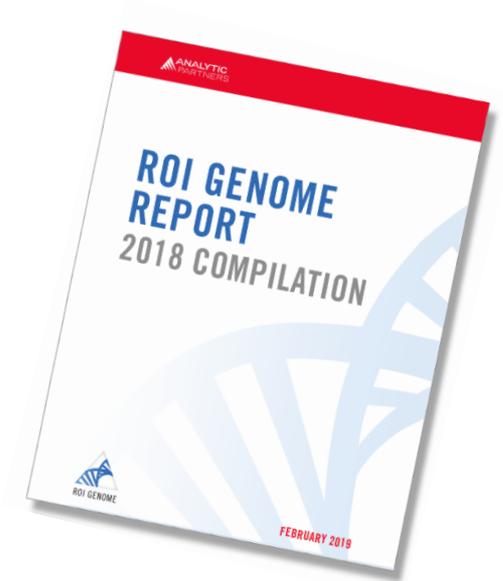
ROI Genome™: Benchmarking, Trends, Best Practices and Understanding Drivers of ROI

ANALYTIC PARTNERS

Advertising Efficiency Trends Across Industries

Online

Offline

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
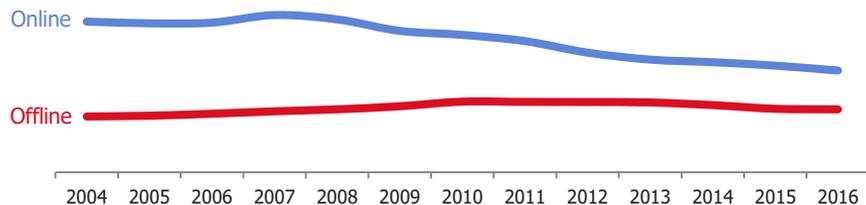
ROIs by Year by Media Type

■ Client
■ AP ROI Genome Intelligent Benchmark

TV Online Video Facebook Paid Post Display Ads Search Print Radio Outdoor
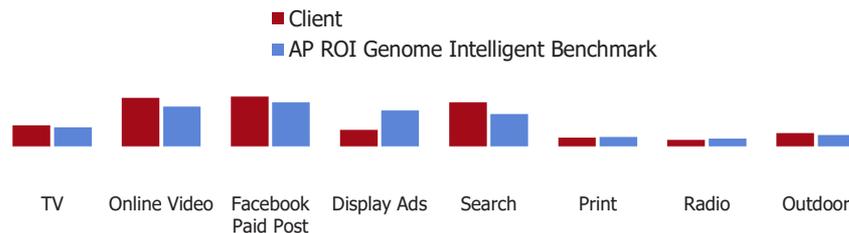
Seasonal Considerations

► **Timing** – build up awareness by airing new campaigns prior to peak season

► **Optimal Levels** – air at higher weekly GRP levels during peak season (Model launch period and mid-cycle enhancements)

► **Maintain SOV** - explore continuity with shorter copy lengths to increase SOV and maintain awareness levels

ROI GENOME

Timing is Key
National TV Impact on Business

Start airing media in May to reach maximum awareness levels for Q3

Go Heavy
Retailer X Q3
TV ROI at Weekly TRP Levels

Air at higher-than-typical levels during seasonal periods

Share of Voice
Comcast + Competitors
Average Monthly GRP Index

Increase SOV during peak seasons to drive break-through. When faced with budget constraints, utilize shorter copies
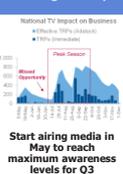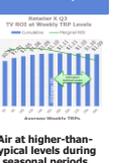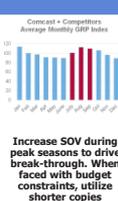
Drivers of ROI Difference in Country A versus Country B

6.28

2.32   0.50   0.87   1.04   0.95   0.60

Factors driving differences in ROI

Country A Average ROI | Product Mix | Penetration | Competitive Fragmentation | Media Cost Efficiency | Other factors | Country B Average ROI
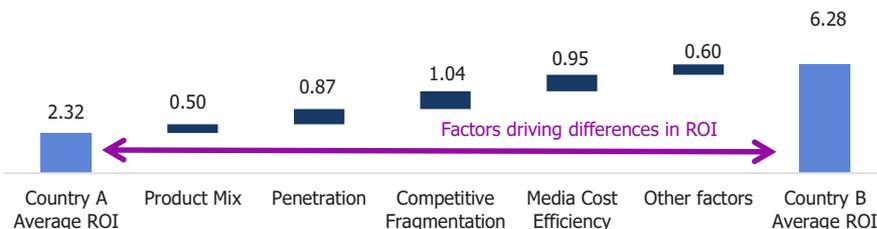
Analytic Partners Data Assessment

► Insights from the data assessment will inform recommendations for improving data quality.

Data Scorecard

Accurate
- Data precision, reliability and quality of variation

In-depth
- Depth of data in key dimensions (geos, time, etc.)

Comprehensive
- Amount of history / experience and completeness

Consistent
- Continuity in measurement & ability to represent the future

Data is Scored as:
0 – Poor   1 – Fair   2 – Good
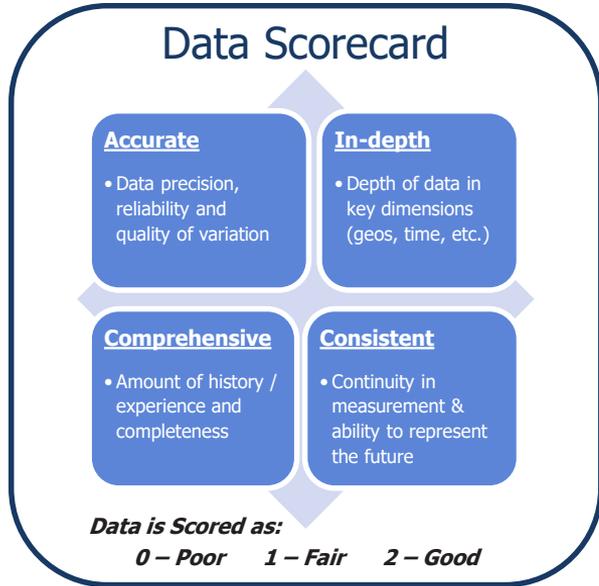
Summary for Client X

Data	Score		
Sales/Financials	2.0	2.0	✔
	1.3	2.0	
Direct Mail	2.0	2.0	✔
	1.7	1.7	
Broadcast	1.7	1.3	✔
	1.7	1.7	
Search and Display	1.6	1.1	!
	1.6	1.5	
Earned Social	1.8	1.3	!
	1.0	1.2	
Branch Location	2.0	1.9	✔
	1.8	1.8	
Consumer Insights/Market Trends	2.0	1.0	!
	1.3	1.0	

Overall Client X Score: 1.60

1.9	1.5	✔
1.5	1.6	

ROI GENOME

1.7	1.5	✔
1.4	1.6	

ROI Genome™ Insights & Best Practices

The Power of Synergy

ROI Comparison: Single Channel Strategy vs. Combined

Offline

Online +30%

Offline + Online +50%

Source: Analytic Partners ROI Genome; Analysis based on over 3,200 campaigns from 2012-2016

ROI GENOME

Short & Long-Term Efficiency

Long-Term Efficiency

SPONSORSHIP

TV

ONLINE VIDEO

DISPLAY

PAID SEARCH

Short-Term Efficiency
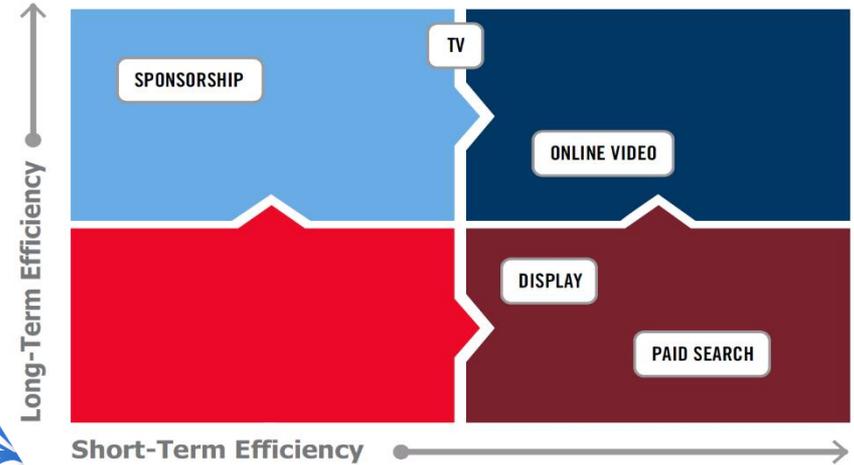
ROI GENOME

AP leverages its ROI Genome Project to advise on never-before run media or marketing executions

Client X and AP benchmark efficiency index comparison

EFFICIENCY INDEX (TV =100)
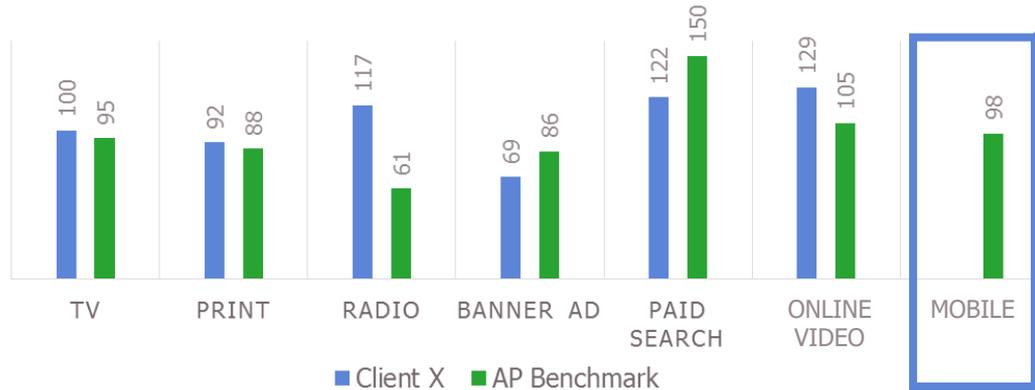
	TV	PRINT	RADIO	BANNER AD	PAID SEARCH	ONLINE VIDEO	MOBILE
Client X	100	92	117	69	122	129	
AP Benchmark	95	88	61	86	150	105	98

■ Client X ■ AP Benchmark

Provides ROI guidance for existing, new and untested media

- Provides ROI perspective and guidance for new and emerging promotional and media executions
- Access to learnings across clients across relevant industries

Inevitability of Disruption
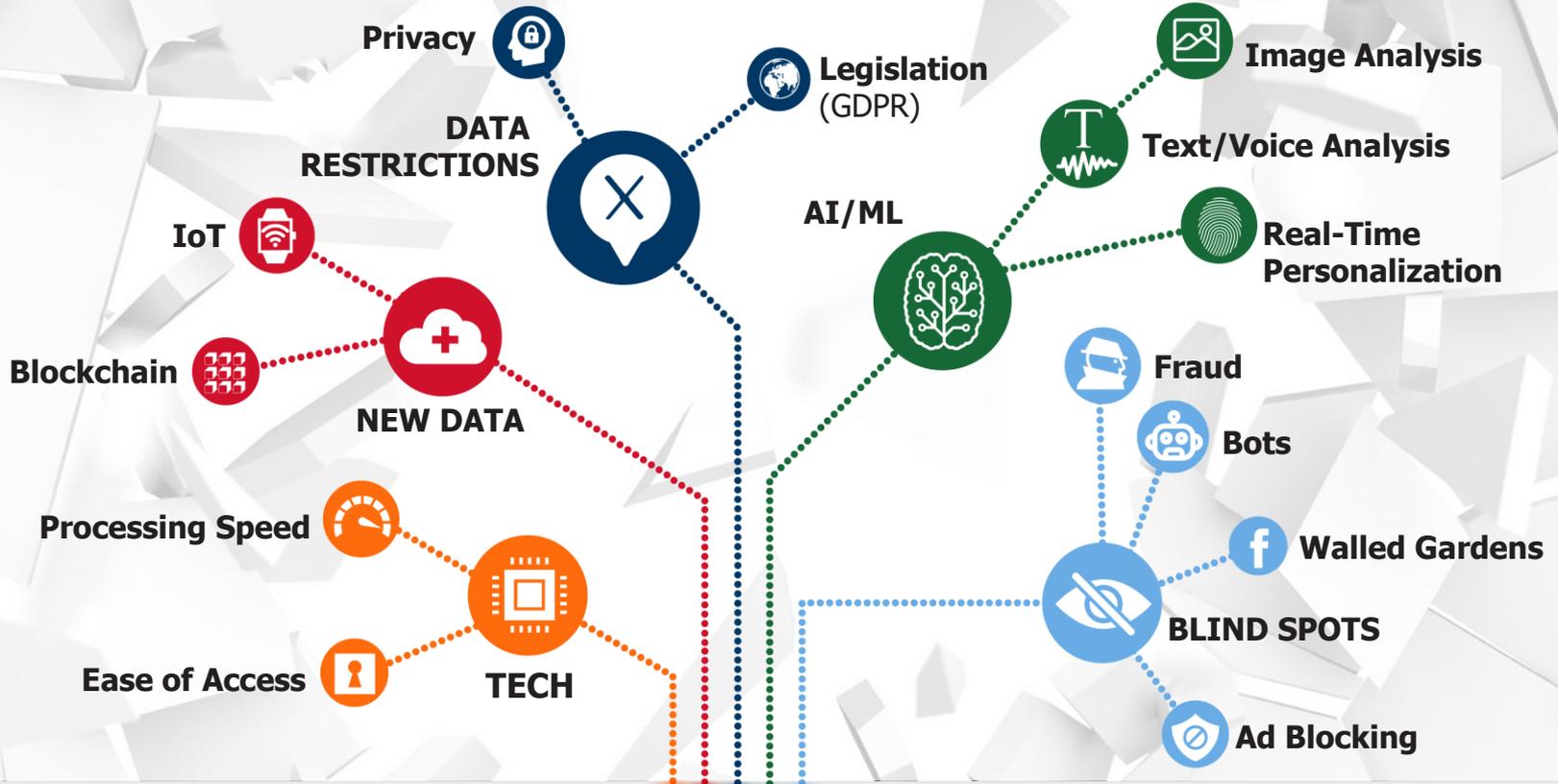
Cross-functional and Agency collaboration for activation

Brand Marketing

Analytic Partners

Finance

Customer Marketing

Integrated Media

Operations

Sales

Agency

Insights
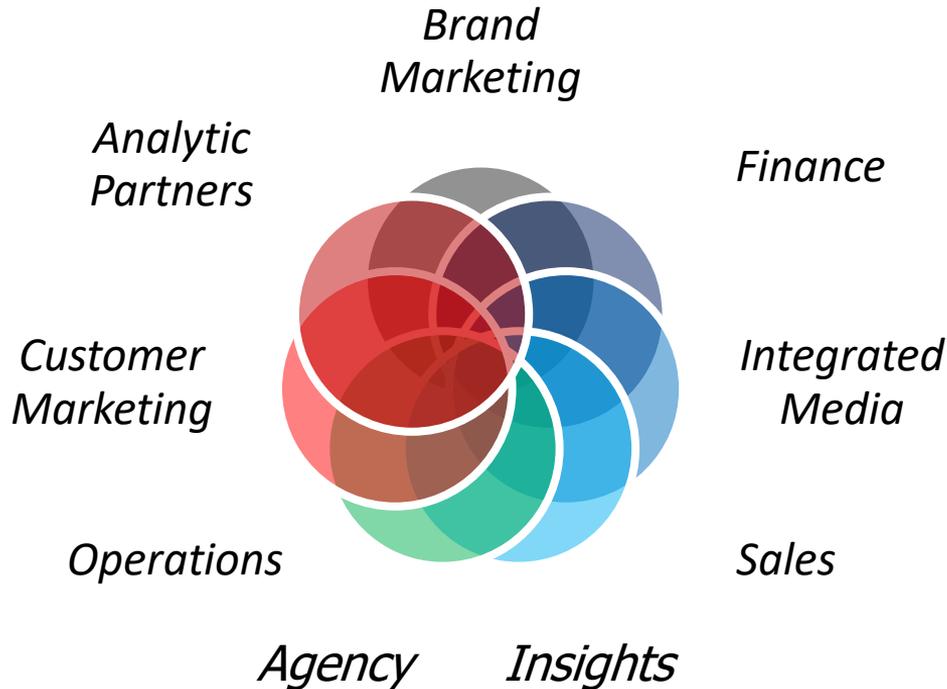
Success Factors:

► Growth & ROI Mindset
► Consistent KPIs

► Budget Planning
► Test and Learn Development
► Media Planning

► Ongoing Simulations
► Competitive Learning

► Consulting/Training for Agencies
► Experimentation
► Thought Leadership

Advanced Analytics - Our Customized Approach

▶ **Holistic approach** capturing all potential business drivers

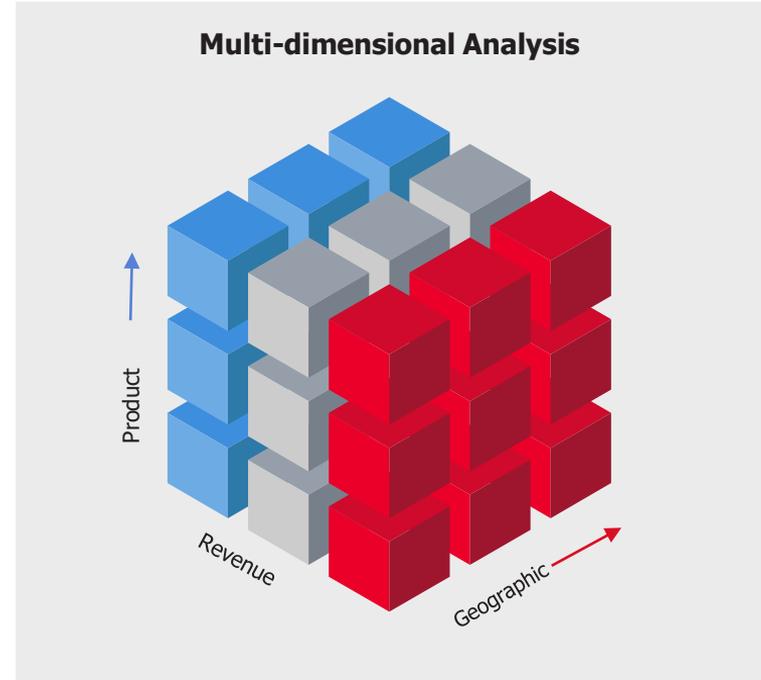▶ **Adaptive Structural Equation Model** allowing discovery of inter-relationship among different KPIs

▶ **Hierarchical Regression** allows for measurement across model dimensions

▶ **Incorporating Brand Metrics** to balance short and long-term objectives

▶ **Robust Data Collection** to provide actionable insights - closest to the planning & buying level; enabling results by:

  – Channel

  – Campaign, daypart, placement, site

  – Loyalty segment, messaging

  – Synergies

  – Diminishing returns, optimal support levels
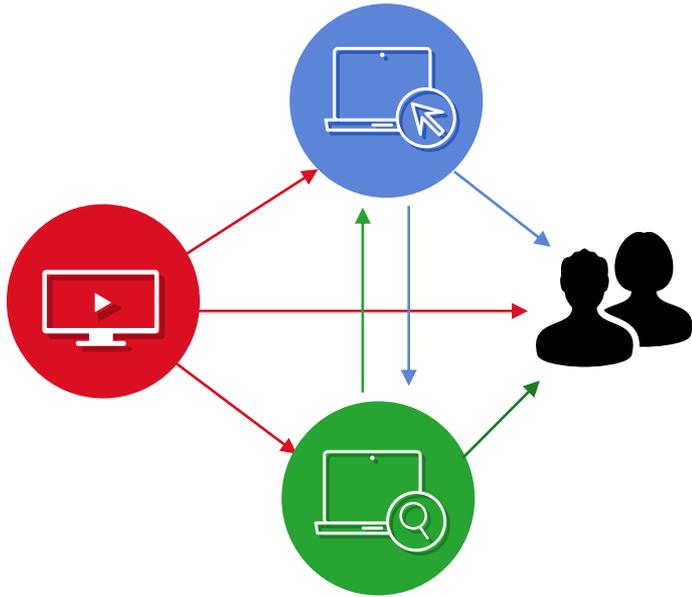
Multi-dimensional Analysis
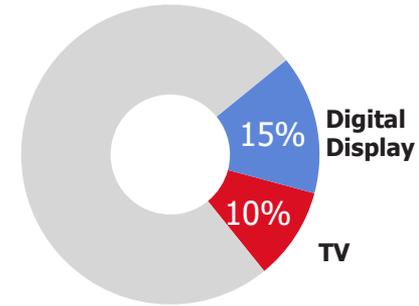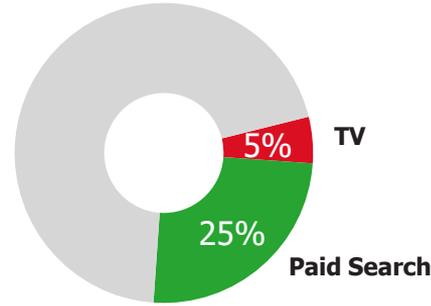
Illustrative Representation of SEM Model Framework

Indirect Impact (Example)

TV → Paid Search → Invest

23%	*TV Indirect (in combination) w/ Paid Search*
23%	*Direct Mail Indirect via Paid Search*
35%	*Social Media Indirect via Paid Search*
19%	*Paid Search Standalone Impact*

Paid Search

In this example, 81% of the Search Activity is resulting from prior marketing activity generating interest
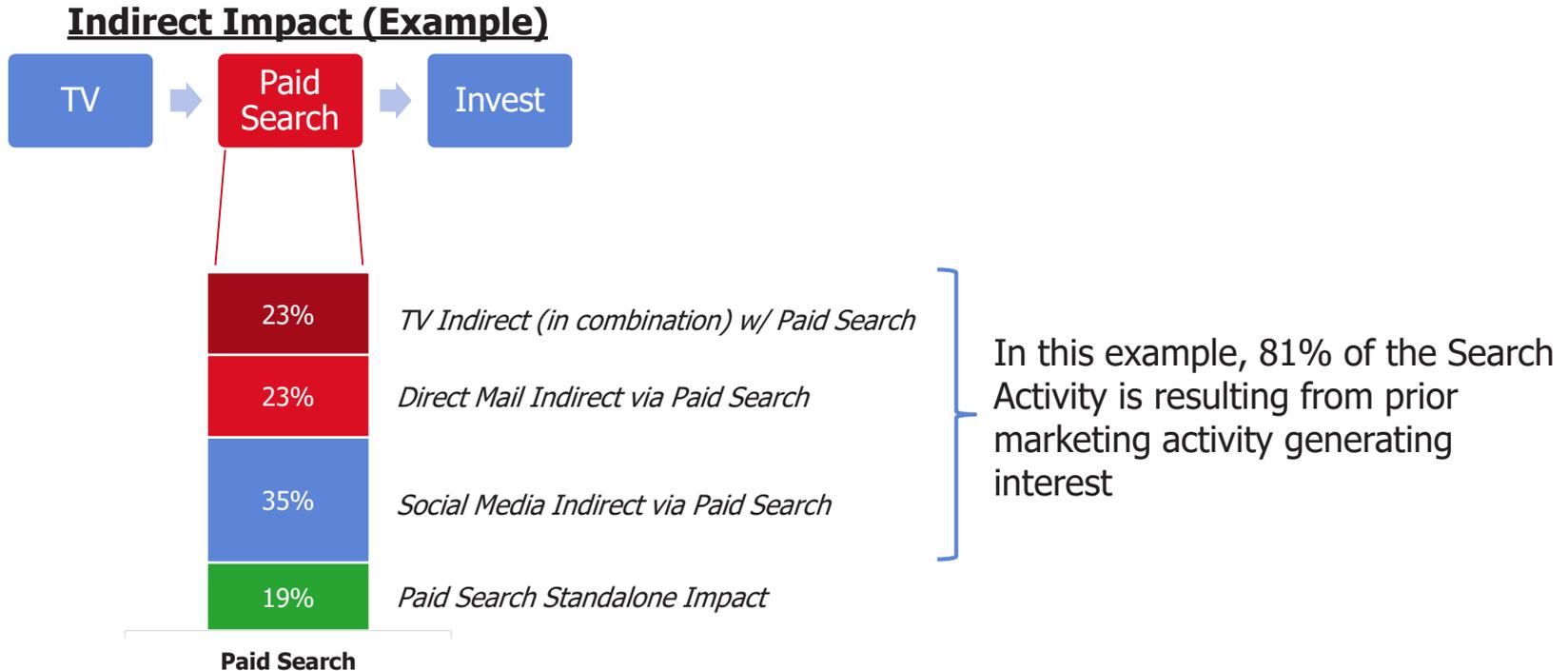
Insights into keyword incrementality and efficiency & by focus

Non-Branded Paid Search Performance by Keyword Type

	Incr. Bookings per '000 Clicks	Incr. Bookings per $MM Spend	CPC	Spend ($'000)	Total Spend ($'000)
Message A	15.4	1,828	$8.42	$219	$529
Message B	46.5	2,866	$16.24	$947	$2,651
Message C	72.0	4,900	$14.69	$896	$2,476
Brand	36.2	4,092	$8.86	$1,341	$3,667
Message D	11.1	896	$12.41	$3,241	$4,928
Message E	16.8	1,335	$12.58	$1,642	$3,983
Message F	2.0	292	$6.99	$574	$1,205
Message G	5.0	496	$10.02	$514	$1,111
Message H	4.3	539	$7.99	$442	$919
Message I	5.0	521	$9.68	$940	$1,616
Message J	0.3	54	$6.26	$75	$120
Message K	10.9	603	$18.09	$1,689	$3,695
Message L	17.5	1,311	$13.31	$3,452	$7,412
Message M	4.0	518	$7.77	$528	$1,055
Message N	4.3	461	$9.27	$94	$154

Legend:
- In-Season
- Brand
- Out-of-Season

Example Deliverable: Spend Optimization

► Optimizing within each tactic can improve revenue by $18.4MM. Another $7.5MM is achieved through spend reallocation.

Client X Marketing Plan Recommendation

Legend: ■ Current Efficiency Index ■ Optimized Efficiency Index ■ Recommended Spend Change

Y-axis: ROI / Spend Change (from -3.0 to 4.0)

	Display	Radio	TV	Online Video	Social Media	Meta Search	Paid Search	Print	Sponsorship
Current Efficiency Index	$2.91	$2.06	$1.98	$1.81	$1.76	$1.66	$1.44	$1.26	$0.88
Optimized Efficiency Index	$3.38	$2.27	$2.18	$1.94	$1.76	$1.82	$1.55	$1.43	$0.88
Recommended Spend Change	$2.3	$1.5	$1.8	$0.0	$0.8	-$0.8	-$2.3	-$1.8	-$1.5

| **Optimization Opportunities** | Prioritize contextually relevant sites | Reallocate spend to most responsive markets identified | Shift support from Prime to EM; air at higher levels during peak season | Air at lower levels to increase continuity; heavy up support in season | Coordinate with Promotions & Sponsorship events | Increase investment in meta search site B | Coordinate with TV; Shift spend to Brand Exact & Generic Type A | Shift spend from publication Z to other magazines; leverage message type 1 | Coordinate with Social; balance short vs. long term objectives |

Embedding into the Organization: Implementation and Validation – Reporting & Tracking

RECOMMENDATION

| Recommended Shift	Size of Prize
Shift $0.5M to digital display activity	+$0.4MM
Include portfolio message in all ads. Shift $1.0M from brand specific to shared	+$0.3MM
Increase support behind Segment A DM. Shift Two Segment B mailers to Segment A	+$0.2MM
Lower frequency caps on partner Z	+$60K
Shift $0.5M from traditional radio to Satellite	+$25K
Increase Print support. Shift $5MM from lower performing activities	+$12.2MM
Shift 50% of :30s OLV spending to support :15s copy lengths	+$6.0MM
Shift $2MM of sampling & event dollars from Retailer A to Retailer B	+$4.9MM
Take 30% of spend from retailer event support from Brand X to Brand Y	+$3.0MM
Shift Co-op investment to higher-end retailers	+$1.4MM
Leverage less-expensive co-op mailers (e.g. postcards)	+$1.2MM

IMPLEMENTATION

| Actions Taken in 2015	Actions Taken in 2016
More investment behind partner A (+$0.3MM)	$360K spend behind partner A
100% messaging shared (+$0.3MM)	90% will be shared
No Segment B DM (+$0.2MM)	Majority of DM will be towards Segment A
Frequency increased	77% of displays included frequency caps
All radio terrestrial	Maintained majority terrestrial radio
2015 Print increased by $1.2MM (+$1.8MM)	Planned for 2016
$15MM shifted to :15s from :30s (+$6.3MM)	Continued focus on :15s
Spending behind Retailer A locked in for 2015	Planned for 2016
Shifted 10% to brand Y ($1MM)	New Brand Launch requires support
No shift made	Some shifts are in the 2016 plan
Unable to action	Planned to implement

VALIDATION

Client X $MM Sales Growth from Insight Implementation

$9.7 — 2015 Actual Validated Revenue

$14.6 — 2016 Projected Potential Revenue
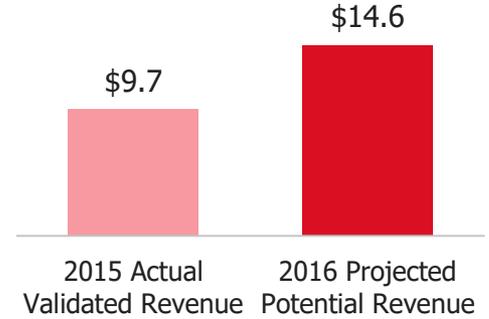
- Impact to business is spending neutral
- 66% of recommendations are actioned in the planning year, on average

We are poised to lead
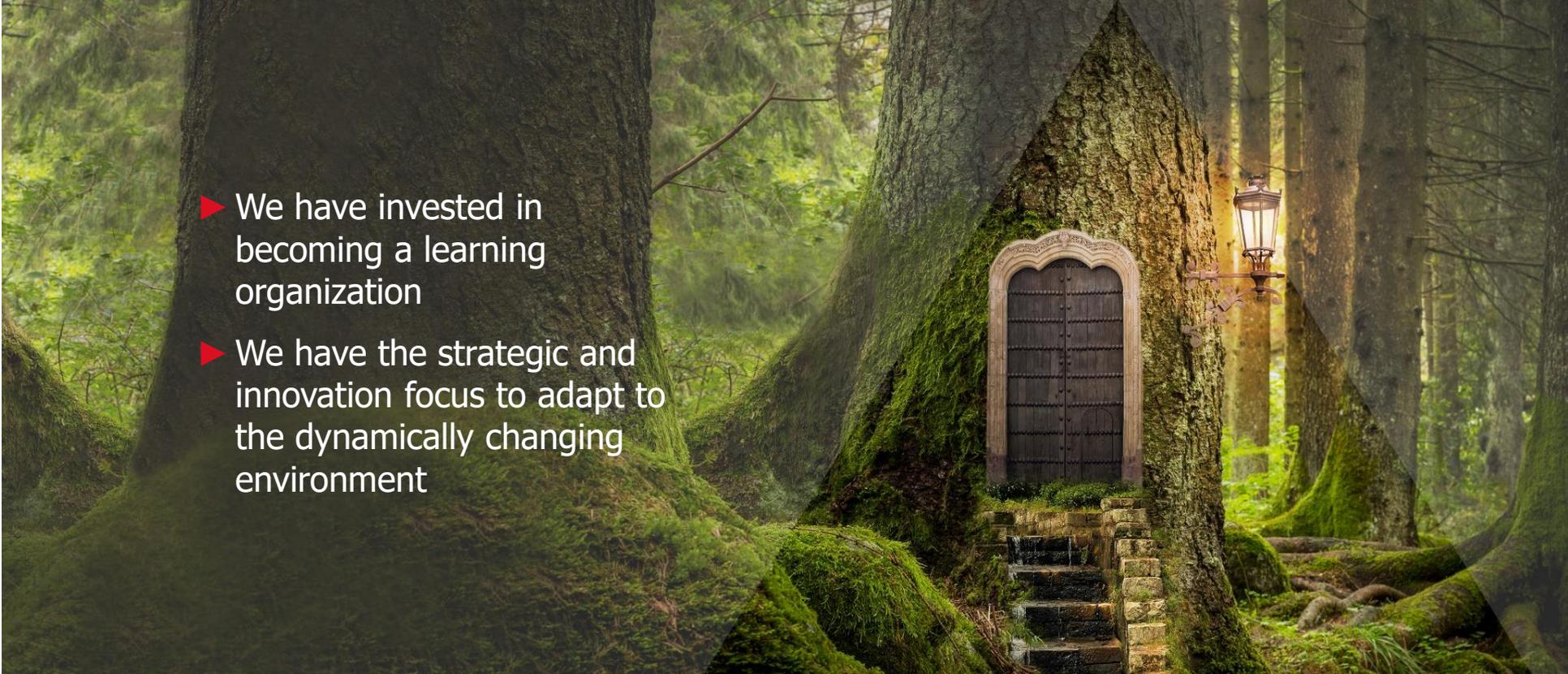
▶ We have invested in becoming a learning organization

▶ We have the strategic and innovation focus to adapt to the dynamically changing environment

Sample Innovation Areas
- Weather
- Customer Franchise Value
- Competitor "War Gaming"

CFV analysis provides a deeper understanding of customer profiles and quantification of long-term ROIs

ANALYTIC PARTNERS

Case Study: Customer Profiles

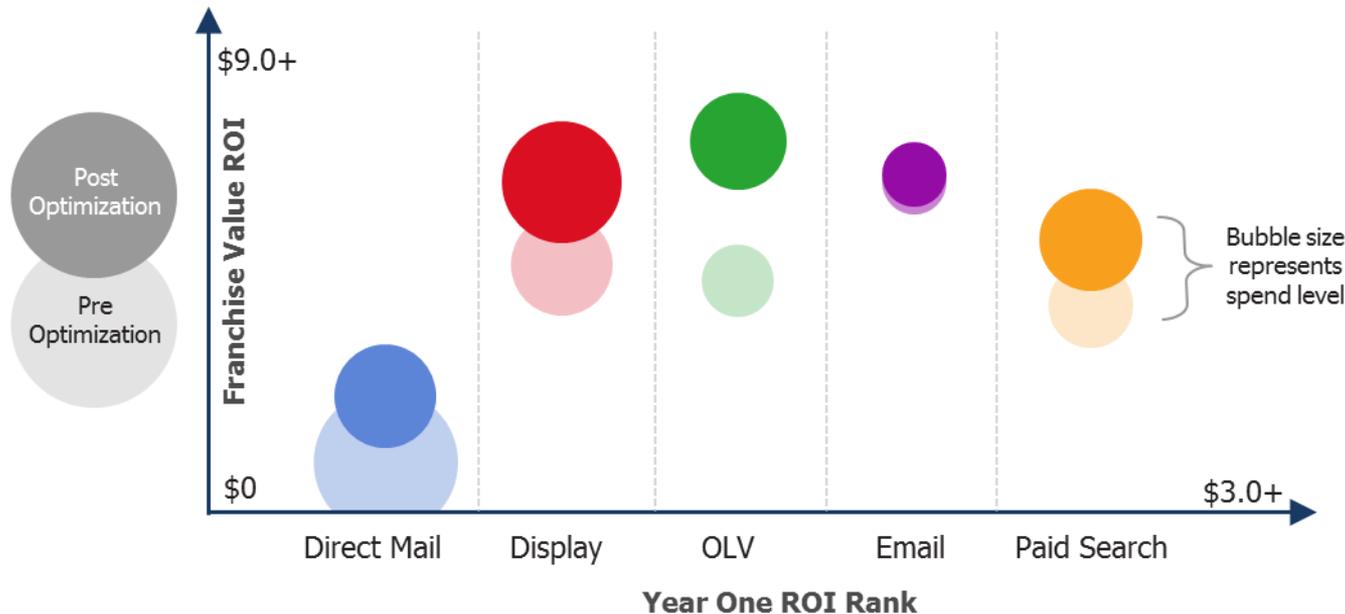|	Jane Doe	Startup Sam	Tom	Madonna	Loyal Lucy
% of Customers	32%	16%	26%	19%	7%
Churn Rate	13%	48%	48%	4%	1%
Acquisition Rate	18%	47%	47%	8%	3%
Customer Franchise Value (per person)	**$199**	**$4**	**$55**	**$709**	**$2,037**
Avg. Transaction Value	Low	Low	High	Medium	Medium
Frequency	Medium	Low	Low	Medium	High

Case Study: Short and Longer Term Email Efficiency by Profile
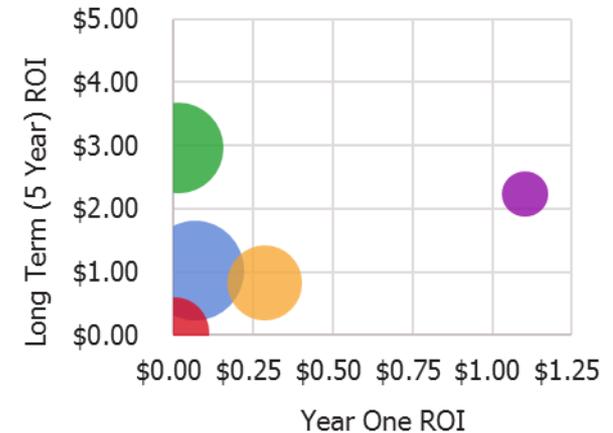
CFV improves targeting through channel and message optimization

► Case Study: spend optimization reduced Client X Loyal Lucy churn by 15% and increased overall CFV by 30%

Loyal Lucy Optimized Franchise Value ROI and Spend by Tactic

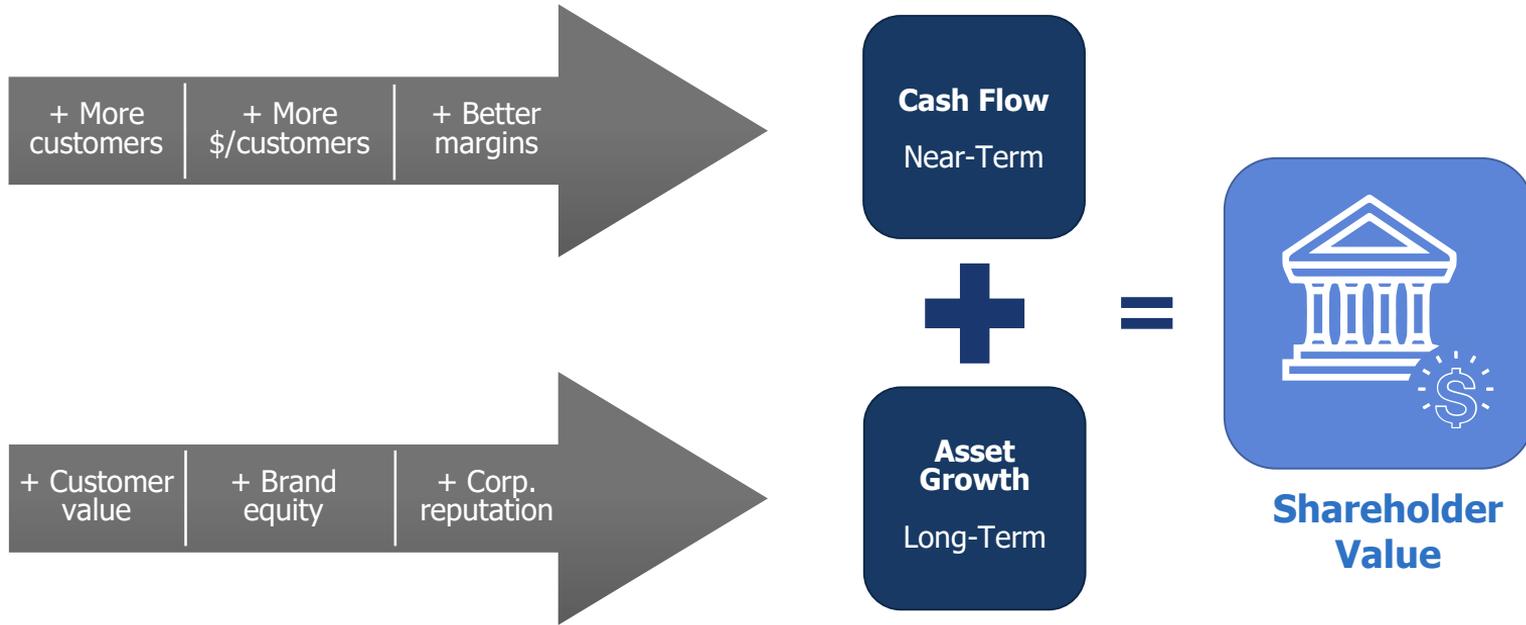Post Optimization

Pre Optimization

Franchise Value ROI

$9.0+

$0

Bubble size represents spend level

Direct Mail | Display | OLV | Email | Paid Search

$3.0+

Year One ROI Rank

+15%
Retention

+10%
Acquisition

+30%
CFV

ANALYTIC PARTNERS

51

CFV Drives Shareholder Value

► Customer insights are tied directly to shareholder value

| + More customers | + More $/customers | + Better margins |

Cash Flow
Near-Term

+

| + Customer value | + Brand equity | + Corp. reputation |

Asset Growth
Long-Term

=

Shareholder Value

War Gaming Scenarios Provided Risk/Benefits & Competitive Actions to Achieve Growth Targets

▶ Scenarios can take into account factors such as industry trends, economic conditions, competitive strategy, inventory constraints, etc.

Additional Marketing Spend Required to Meet Growth Objectives

Legend: ● Low ● High ● Mid
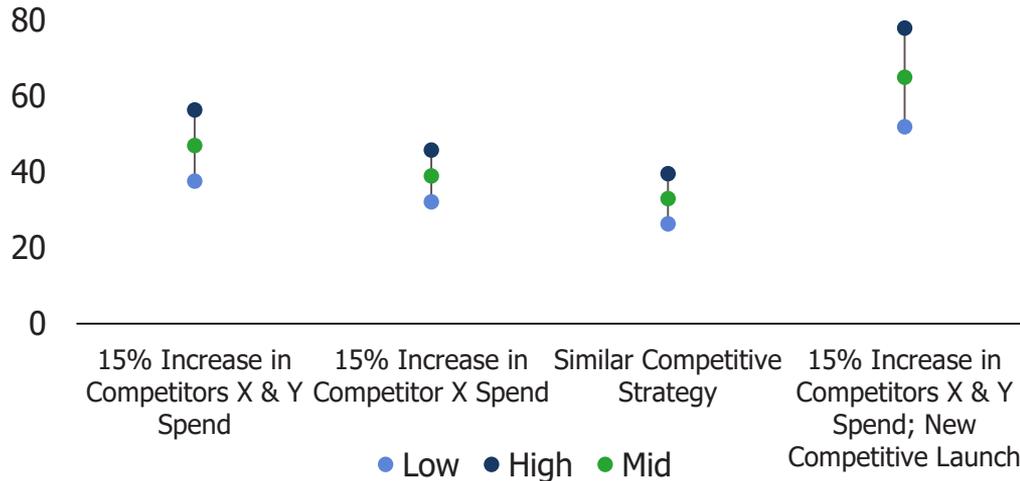
Business Performance

- Marketing Support
- Economy
- Competitive Strategy
- New Entrants
- Consumer Trends
- Supply Chain
- Catastrophic Events

Weather-effects Marketing Optimization

HELIO: Forecasting Weather Influenced Demand

HELIO provides best-in-class weather-influenced demand forecasts

► Insights for the whole organization

- – When and where to activate or pull back

► Powerful Forecasting and Visualizations

- – Highly accurate with best-in-class predictive power

► Cutting-Edge Machine Learning

- – HELIO's models capture non-linear relationships, sophisticated interactions and unique dynamics to produce best-in-class predictions
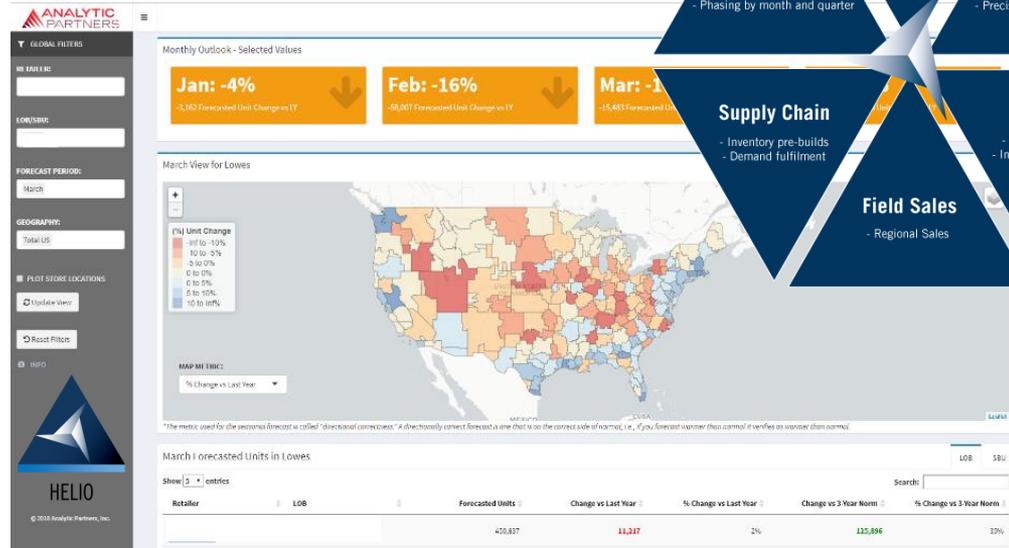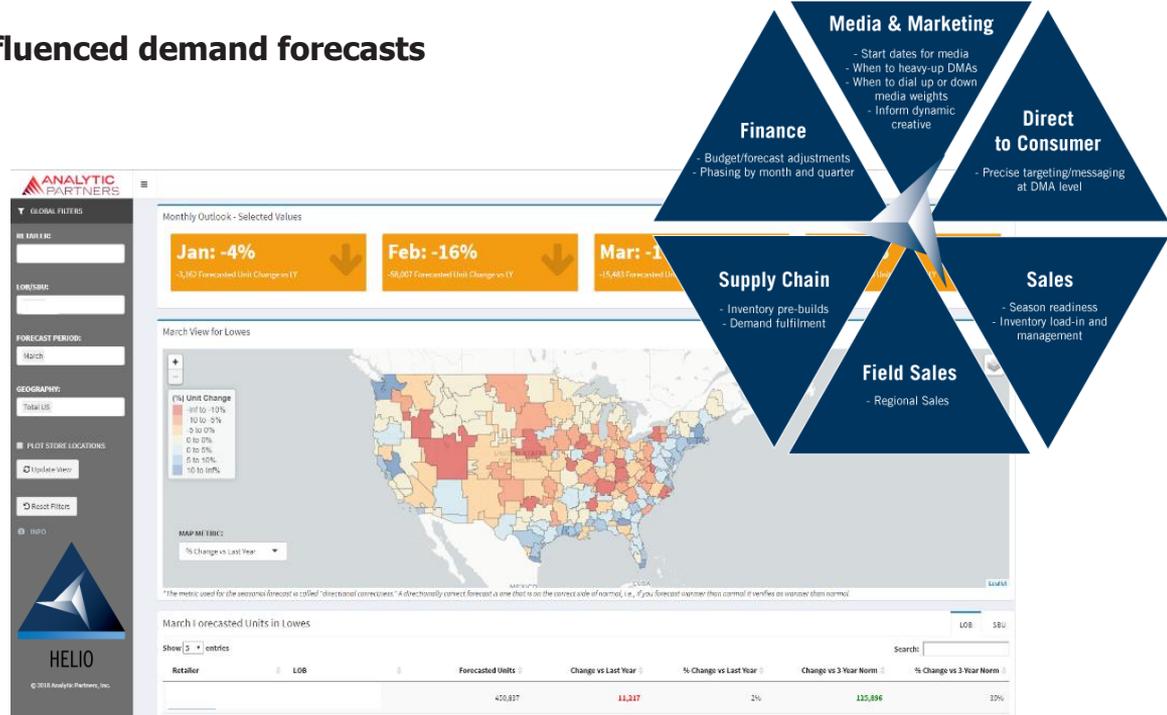
Recognized for Data Analytics Storytelling

MARKETINGDIVE   Deep Dive   Opinion   Library   Events   Jobs   Topics ⌄

BRIEF

Diageo, Scotts and more recognized for achievements in data and analytics

- Nationwide and Scotts were tied for Data Analytics Storytelling, a category covering achievement in using data to tell enlightening, visually-driven stories. Nationwide developed a Retirement Readiness Report experience for consumers, which resulted in an 11% improvement in retirement readiness scores. Scotts Miracle-Gro used a predictive weather-modeling tool, called Helio, to offer weather-driven demand sales forecasts. The result was historic sales in May 2018 because the company was able to take orders in areas where competitors couldn't keep up with demand.

ANALYTIC PARTNERS

Unified Measurement:
Approach and
Methodology

Analytic Partners Approach to Measurement

Customer Lens   +   Business Lens

Strategic

+

Tactical

Customer Franchise Value

Continuous Marketing Mix

Adaptive Modeling for one version of the truth

Multi-touch Attribution

Media Deep Dive

Unified Measurement
Holistic Business & Customer view; Consistent Data & Incrementality – Delivering:
One Version of the Truth

Marketing Mix Model (MMM)
Full Business View
Aggregate Models

- Offline Media
- Social
- Online Media
- Price/Value
- Operational/Internal
- Competition/External

Multi-Touch Attribution (MTA)
Customer Touchpoints Purchase Path
User-Level Models

Aggregate weekly/monthly, price, incentives, impressions/GRPS, sales
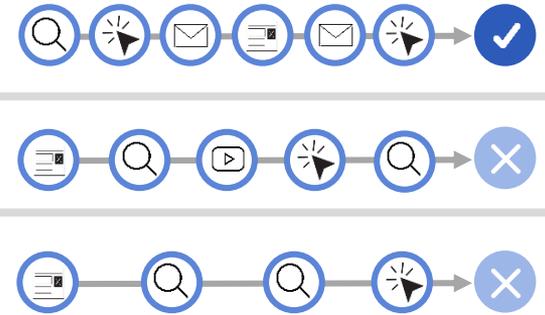
Addressable exposures, clicks, queries, conversions

Analytic Partner's Adaptive Modeling System

Adaptive Modeling for one version of the truth

Mathematical Model
- Probabilistic
- Regression

Artificial Intelligence
- Machine Learning
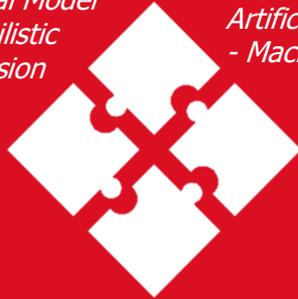
Direct Measurement
- A/B - Validation

► **Marketing Mix**: Innovative statistical modeling approaches with advanced options of pathway, multiple KPIs and hierarchical modeling

► **Attribution**: Patent pending Iterative Machine Learning combined with probabilistic discrete choice and game theory modeling approach

► **Direct Measurement**: A/B Testing for validation of insights and deeper understanding

Live Modeling, along with custom consulting, provides a Real Time delivery cadence while also allowing for deeper insight

"Live" Models

+

Custom Consulting

→ **Real-time/ Right-time Delivery**
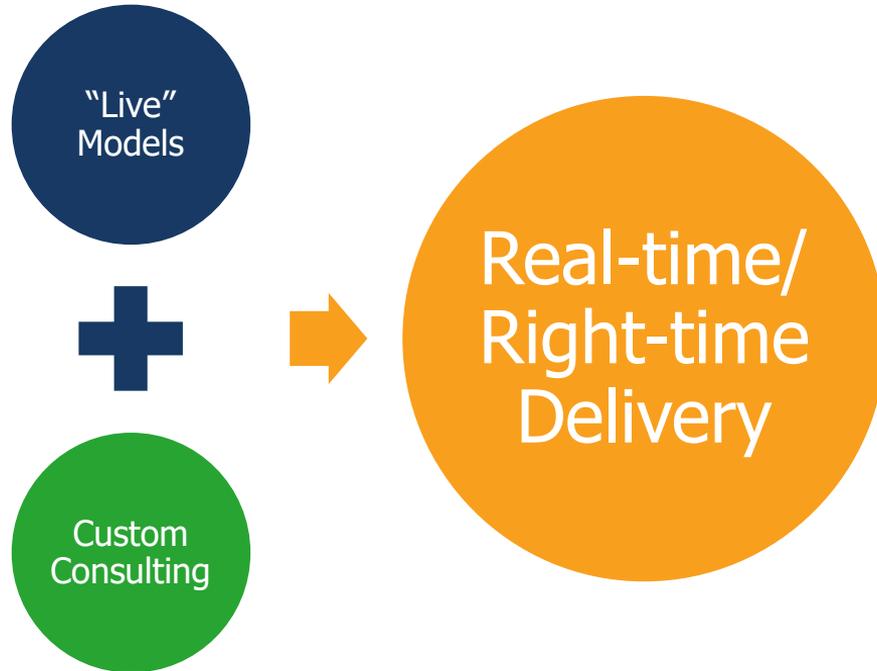
► **Real-Time Delivery**

– Monthly business diagnosis

– In-campaign effectiveness

– Standard reporting/analysis to streamline

► **Right-Time Delivery**

– On-demand custom deep dives

– simulations and scenarios available on demand

– long-term incorporated through multi-objective optimization

Real-Time "Live Models" - Driving Insights to Action:

Measure

"Live" models quantify the impact of online and offline media as well as external factors such as competition

Diagnose

Details provided on specific channel performance of recent campaigns and tactics, identifying how content, creative performed across campaigns

Quantify
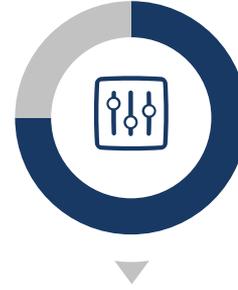
Results used to reallocate spend, change media buys, marketing campaigns, and targeting strategy to quickly regain market share

Action

Activate budget changes in collaboration with media agency and digital buying platforms (programmatic partners, search partner)

AP's Patent Pending Adaptive Discrete Choice Model Approach

Initial probabilistic conversion model (discrete choice model) using just converted users and a subset of similar non-converted users

Excluded users with low predicted conversion probability (based on probabilistic formula) are iteratively added back into the model training dataset

Model coefficients are continually refined by adding non-converted users until we no longer achieve improved model fit

Converted Users

Non-Converted Users

Model Classification Accuracy

Model 1 Dataset

Non conversion data evaluation

Model 2 Dataset

Non conversion data evaluation

Model 3 Dataset
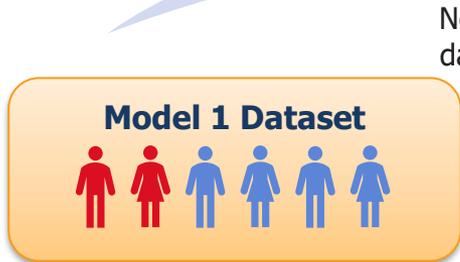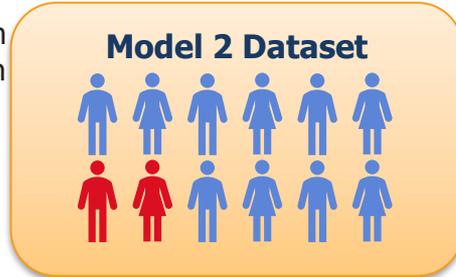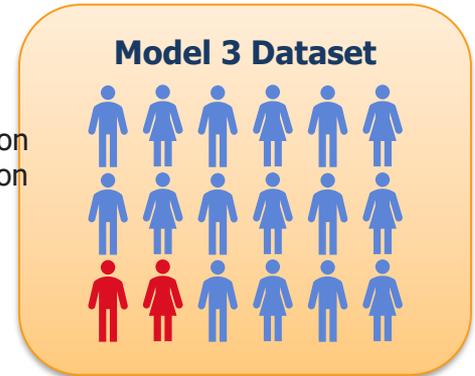
Unified Measurement Validation Case Study: PSA Test for Display

► AP provides unified measurement (MMM + MTA) for this client; working with organization for 8+ years

► Collaboration and transparency to validate and drive organizational buy-in.

Challenge	Objective	Results
With new senior leadership on board, there was a need to validate results that digital display ROI was so strong	A PSA test was run for display ads to measure the incremental impact of display in driving sales, site visits and search queries	Analytic Partners' unified measurement results were within ~90% accuracy of the PSA test

Display ROI - PSA Test vs. Unified Measurement Results

PSA Test   AP's Unified Measurement
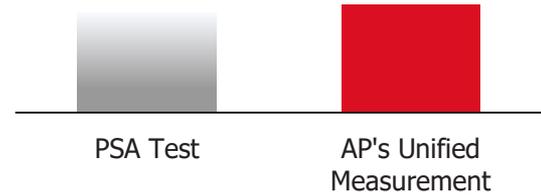
Adaptive Discrete Choice modeling approach captured much higher percentage of converted users in top deciles

Client Cases	Validation Metric	
	Conventional Discrete Choice Model	Adaptive Discrete Choice Model
B2B Case	65.2	75.9
Retail Case	62.7	73.5
Consumer Banking Case	77.5	85.3
Online Education Case	72.4	86.7

Proposed Engagement & Discussion

Setting up the ROI Program for flexibility and growth

Analytic Partners' perspective:

▶ An ROI program will bring immediate value but should evolve over time in line with business needs

▶ Initially we want to ensure that the program is designed for flexibility (scalability & depth of insight) as well as to drive value

▶ We have an opportunity to build and expand the program & capability together

Common Process

Kick off	Data Collection and Review	Data Modelling	Working Session	Ongoing Formal and Informal Reviews
Week 1	**Week 1-4**	**Week 5-8**	**Week 9-11**	**Week 12**

PROCESS

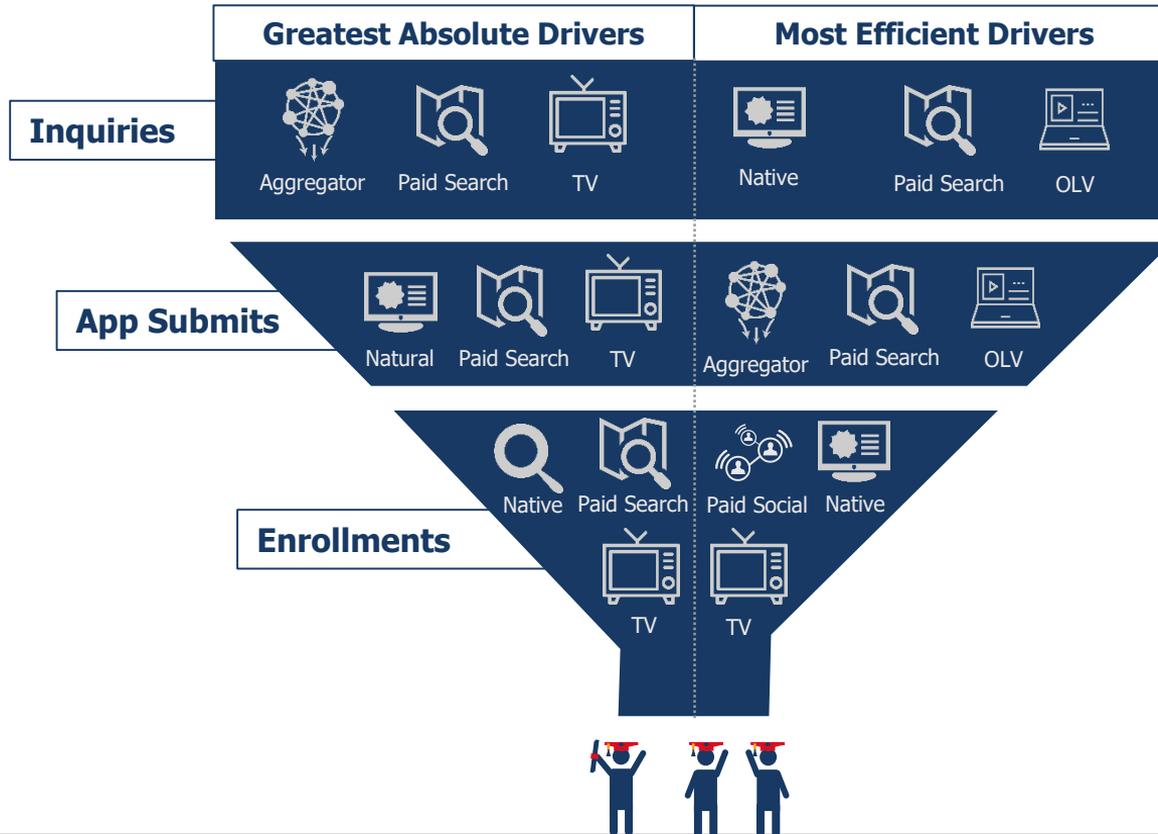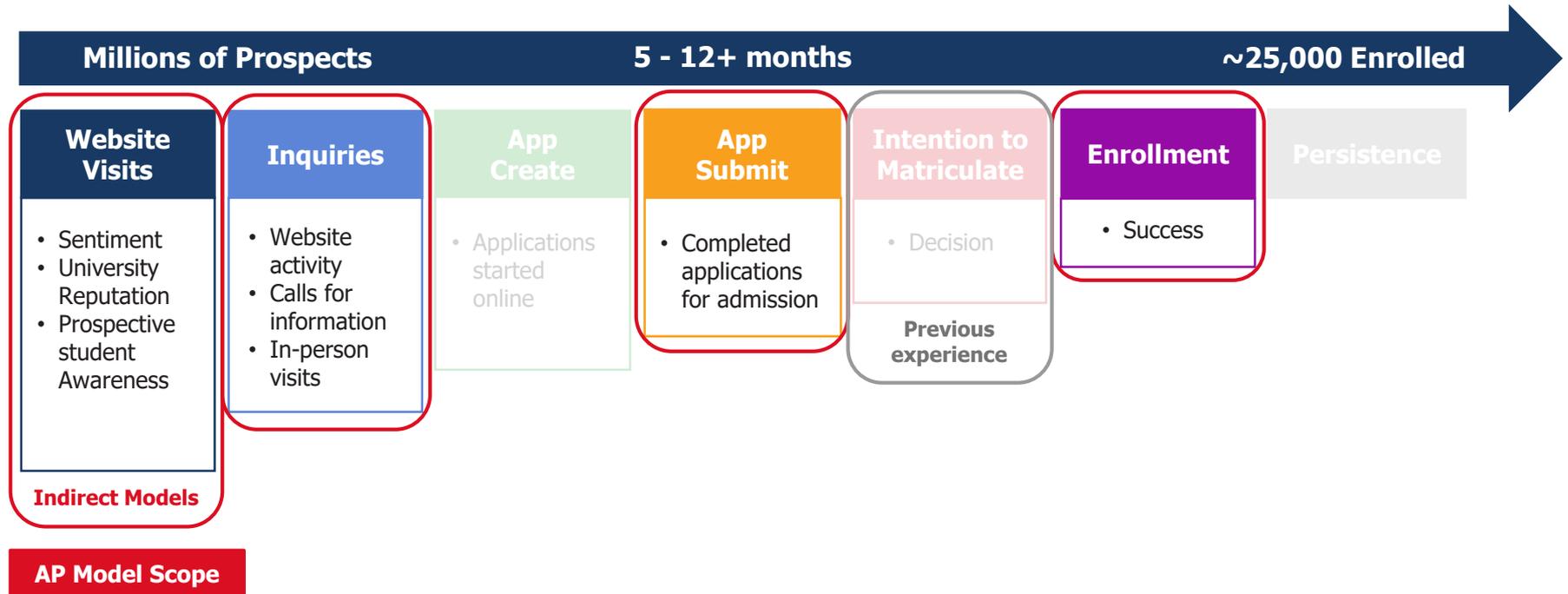|				
AP to present a brief overview of the MMM project scope and project process to the key stakeholders and identify key data owners AP to meet with key stakeholders to understand business requirements	AP to collect the required data for modelling from the data owners Following this, a data review meeting will be held with key stakeholders to align on the data that will be inputted into the models and to get sign off on the data to be used	AP to build the models The models will be reviewed for model robustness using a set of key statistical testing measures Following this, the model outputs will be analysed to generate the sales decomposition by marketing vehicle and ROIs	AP to share initial findings with the key project working group. Following this meeting, the results will be presented to all key stakeholders Next steps include: simulations and strategy implementation	AP to deliver the presentation outlining the key insights and recommendations to the business These models, reviews, strategy sessions run at a cadence appropriate for client

OUTCOME

Clarification of project KPIs, process and responsibilities	Collection of data and alignment on model inputs	Robust models and model outputs generated	Key findings shared with all key stakeholders	Presentation of insights and recommendations

Appendix

This approach allowed us to separate out the most effective / efficient tactics at each stage in the decision journey

Greatest Absolute Drivers

Most Efficient Drivers

Inquiries

Aggregator | Paid Search | TV

Native | Paid Search | OLV

App Submits

Natural | Paid Search | TV

Aggregator | Paid Search | OLV

Enrollments

Native | Paid Search | TV

Paid Social | Native | TV

Previous analyses focused only on digital attribution or only covered late stages in the decision funnel

Millions of Prospects   **5 - 12+ months**   **~25,000 Enrolled**

Website Visits
- Sentiment
- University Reputation
- Prospective student Awareness

Inquiries
- Website activity
- Calls for information
- In-person visits

App Create
- Applications started online

App Submit
- Completed applications for admission

Intention to Matriculate
- Decision

Previous experience

Enrollment
- Success
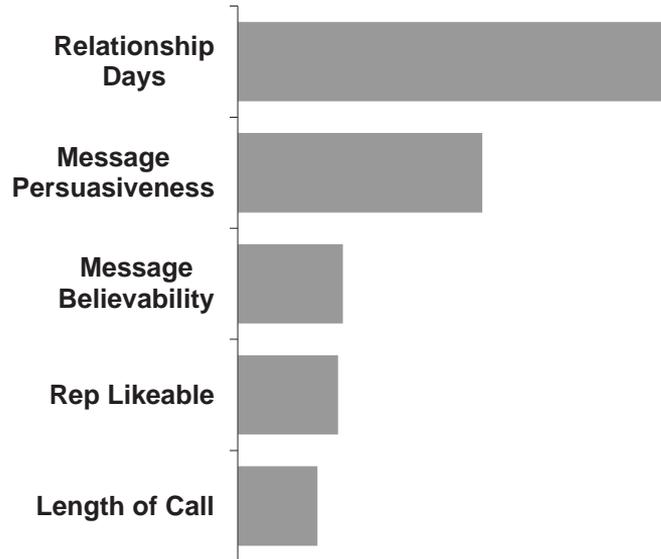
Persistence

Indirect Models

AP Model Scope

Optimize by Changing Spend/Allocation By Tactic or Time ☑

► The drivers of salesforce effectiveness varied by region.

Region A

Relationship Days	████████████████
Message Persuasiveness	█████████
Message Believability	███
Rep Likeable	███
Length of Call	██

Region B

Frequency	████████████████
Message Persuasiveness	███████████████
Message Believability	████
Relationship Days	███
Rep Likeable	██