FROM INTUITION TO EVIDENCE

# Quantitative Analytics for Marketing Resource Allocation

A strategic ebook on how evidence, experimentation, econometrics, CLV and managerial judgment are redefining the way marketing budgets should be allocated.

**ROI**
MUST MOVE FROM ATTRIBUTED REVENUE TO INCREMENTAL PROFIT

**CLV**
TURNS ACQUISITION AND RETENTION INTO PORTFOLIO DECISIONS

**Tests**
SEPARATE CORRELATION FROM CAUSALITY

> *The future of marketing is not less creative. It is more accountable.*

## Ebook map

**01** Strategy and objective function

**02** Metric architecture and funnel logic

**03** Econometrics and response curves

**04** Experiments and incrementality

**05** CLV, ROI and portfolio allocation

**06** Governance and implementation roadmap

### Formal lens

The ebook combines marketing strategy, analytics, pricing logic, communications planning and financial governance into one allocation framework.

### Operating promise

Every model and metric should clarify a managerial question: which allocation claim is supported by the available evidence?

PRESSUP RESEARCH - 2026

THE MANAGERIAL SHIFT

# Marketing is becoming a measurable system for business decision-making.

For years, marketers defended budgets through stories, brand emotion and surface-level indicators. Those still matter, but they are no longer enough when finance teams ask which investment created incremental value.

> ***The question is no longer: how many conversions were attributed? The sharper question is: what value did this create that would not have existed otherwise?***

### Marketing is a capital allocation problem

Budgets, people, media inventory and managerial attention are limited. The real question is where the next dollar creates the highest incremental business value.

### Activity is not the same as value

Reach, clicks and engagement can be useful signals, but the operating target should be incremental profit, contribution margin, CLV or another economic outcome.

### Marginal value matters more than retrospective attribution

A channel with strong historical volume may already be saturated. Resource allocation should compare marginal return across channels, segments and time periods.

### Judgment still matters

Models estimate impact. Managers interpret market context, brand strategy, competitor behavior, regulatory risk and long-term positioning.

## Why this matters now

- Customer journeys are fragmented across paid, owned, CRM, sales and offline touchpoints.
- Platform attribution is convenient but often misaligned with true causal impact.
- Budget pressure forces marketing to speak the language of profit, margin and capital allocation.
- AI makes content and campaign production faster, which increases the need for better allocation rules.

| FORMAL LENS | MARKETING IDEA | ALLOCATION USE |
|---|---|---|
| **Strategy** | 5C, STP, positioning, category role | Defines where marketing has the right to win. |
| **Tactics** | Product, price, place, promotion | Turns strategy into controllable business levers. |
| **Measurement** | Funnel, experiments, econometrics, CLV | Separates movement from value creation. |
| **Governance** | Finance logic, brand horizon, risk control | Prevents measurement systems from becoming unchecked automation. |

## Research stance

The central discipline is to connect strategic marketing choices with measurable economic outcomes. A campaign can be creative, emotionally resonant and still underperform if it is aimed at the wrong segment or constrained by weak availability.

A useful analytics system therefore asks two questions together: which customers are we trying to influence, and which business value should change if the influence is real?

STEP ONE

# Before collecting more data, define what the marketing system is optimizing.

A scientific marketing allocation system begins with an objective function. A retailer may maximize gross profit from repeat purchases. A software business may maximize customer lifetime value while keeping CAC under control. An education business may optimize enrolments, retention and referral value.

A USEFUL ALLOCATION QUESTION

## What outcome are we maximizing, under what constraints, and over what time horizon?

### Common objective choices

- Incremental gross profit
- Customer lifetime value
- Contribution margin
- Retention or churn reduction
- Long-term brand-assisted growth
- Enterprise value or market share under margin constraints

| LAYER | EXAMPLES | DECISION ROLE |
|---|---|---|
| **Input** | Budget, impressions, frequency, promotion depth, sales effort | What the company controls directly. |
| **Mechanism** | Reach quality, response rate, conversion path, retention trigger | How marketing is expected to create value. |
| **Outcome** | Incremental revenue, gross profit, CLV, contribution margin | The business result that should guide allocation. |
| **Constraint** | Budget cap, channel capacity, margin floor, stock, team workload | The limits that make optimization necessary. |

### Strategic guardrails

A formal marketing plan should not optimize budget in isolation. Product quality, price architecture, channel availability and communication strategy shape what any media dollar can accomplish.

This is why quantitative allocation must stay connected to the 4P system. Media can accelerate demand, but product-market fit, distribution access and perceived value decide whether that demand becomes profitable revenue.

METRIC ARCHITECTURE

# A measurement framework is incomplete unless it connects inputs to economic outcomes.

Metrics must separate mathematical identities from empirical hypotheses. Profit equals revenue minus cost by definition. But the claim that more paid search spend creates more profit is a hypothesis that requires evidence.

## Measurement architecture

1. **Spend**
   Media, content, promotion, sales effort
2. **Response**
   Reach quality, conversion, retention signal
3. **Economics**
   Gross profit, margin, CLV, net contribution
4. **Decision**
   Scale, hold, cut, test, reallocate

### 5C and 4P discipline

Allocation should reflect customers, company capabilities, competitors, collaborators and context, then translate into product, price, place and promotion decisions.

### STP before spend

Segmentation, targeting and positioning define where a brand can win. Analytics should sharpen that choice instead of spreading budget evenly.

### Funnel diagnostics

Funnel metrics reveal where demand leaks: awareness, consideration, inquiry, qualification, conversion, repeat purchase or referral.

### Efficiency rule

Spending should expand until marginal return no longer exceeds marginal cost, while still respecting brand, capacity and strategic constraints.

## Analytical discussion

A metric system becomes analytically meaningful only when it preserves the causal chain from managerial action to customer response and then to financial consequence. The purpose is not to display more indicators, but to specify how a controllable marketing input is expected to influence a behavioral mechanism and how that mechanism is expected to create economic value.

The distinction between an accounting identity and an empirical proposition is central to rigorous measurement. Margin is an identity; the effect of media frequency on margin is a proposition that requires evidence. When these categories are confused, numerical reporting can produce unwarranted confidence while leaving causality unresolved.

A formal measurement architecture also protects strategic reasoning from tactical noise. Short-term indicators can support operational control, but they should not dominate resource allocation. Positioning, customer quality, channel capacity and brand memory all determine whether an observed signal warrants scaling, further experimentation or deliberate restraint.

For this reason, the measurement system should be interpreted as a theory of market response rather than a neutral collection of numbers. Each metric occupies a role in that theory: some describe exposure, some describe behavioral movement, and only a smaller set can support claims about incremental economic contribution.

The academic implication is that marketing measurement should be evaluated by explanatory validity, not by visual completeness. A useful system clarifies which constructs are being observed, which relationships are being inferred and which managerial decision is justified by the evidence.

MARGINAL IMPACT

# Econometrics helps estimate where the next dollar should go.

### Marketing mix modelling

Uses historical data to estimate how media, promotion, price, seasonality and external factors relate to sales or profit.

### Sales response curves

Show how returns change as spend rises. They reveal saturation, diminishing returns and where budget should stop scaling.

### Bayesian and uncertainty-aware models

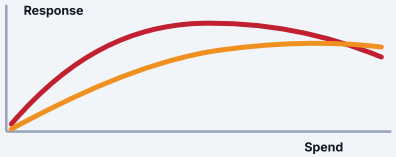
Help teams express confidence ranges instead of pretending that every estimate is a fact.

### Optimization layer

Uses estimated marginal returns and constraints to recommend budget shifts across channels, segments and periods.

## How to read response curves

Marketing returns often decline as spend rises. The first dollars may reach highly responsive customers. Later dollars may face colder audiences, higher bids or cannibalized demand. The optimal budget is found where the next dollar is placed in the channel or segment with the highest marginal return.




## Manager question

**If we add one more dollar here, how much incremental contribution margin will it create?**

This is a sharper question than asking whether a channel generated sales in the past.

## Marketing science reading

Econometric work is most useful when it connects marketing activity to marginal revenue and marginal cost. A channel may look successful in total, yet still be the wrong place for the next dollar if its marginal return has already flattened.

The manager should read the model as a decision aid, not a command. Positioning, competitor movement, category maturity and supply constraints can justify a controlled override when the assumption is documented.

FROM CORRELATION TO CAUSALITY

# Historical data can reveal patterns. Experiments test what would have happened without marketing.

Attribution assigns credit. Incrementality estimates additional impact. Without controlled tests, companies can overfund channels that look efficient because they sit close to purchase, not because they truly created demand.

> ***A campaign should not only ask: who touched the conversion? It should ask: which conversion would have disappeared if the campaign had not run?***

| TEST TYPE | BEST USE CASE | DECISION VALUE |
|---|---|---|
| **A/B test** | Creative, landing page, offer, email, message | Best for isolated changes in controlled digital surfaces. |
| **Geo-lift test** | Regional media, offline campaigns, omnichannel spend | Useful when user-level randomization is not feasible. |
| **Holdout group** | CRM, retention, lifecycle marketing | Estimates what would happen without the campaign contact. |
| **Multivariate test** | Multiple creative or funnel variables | Powerful but needs enough volume and careful interpretation. |

### Pre-specify the design

Causal inference is weaker when treatment logic is reconstructed after outcomes are observed.

### Protect the counterfactual

If the control group is contaminated, the study cannot estimate the value of withheld exposure.

### Connect to economic value

The outcome variable should reflect revenue quality, margin or durable customer behavior.

## Methodological discussion

Controlled experimentation introduces the counterfactual logic that attribution alone cannot provide. A campaign may be associated with many conversions, yet the relevant research question is how many of those conversions would not have occurred in the absence of treatment. This is why holdout groups, geo-lift designs and randomized exposure are central to evidence-based allocation.

Experimental design must be specified prior to execution. If treatment structure, success criteria or comparison groups are selected after performance is observed, the exercise becomes narrative validation rather than empirical inquiry. A valid design defines treatment, control, outcome metric, duration, minimum detectable effect and contamination risk before spend is committed.

Experimental evidence must then be interpreted within the broader marketing system. A weak immediate lift does not necessarily invalidate brand-building activity; a strong promotional lift does not necessarily imply profitable demand creation. The result must be read alongside margin, customer quality, strategic horizon and the role of the intervention in the purchase process.

The strongest use of experimentation is therefore cumulative. A single test informs one decision, but a sequence of well-documented tests builds institutional knowledge about audience sensitivity, channel interaction, message elasticity and the conditions under which marketing investment becomes economically defensible.

In this sense, experimentation is less a campaign tactic than a research design discipline. It formalizes uncertainty, makes non-observed outcomes discussable and prevents resource allocation from being governed solely by post-hoc attribution narratives.

## Methodological implication

**Attribution**
Descriptive association, not causal proof.

**Experimentation**
Incrementality evidence for allocation inference.

**Econometrics**
Portfolio effects across channels and time.

CUSTOMER LIFETIME VALUE

# CLV turns marketing from campaign spending into customer portfolio management.

CLV reframes value as the total worth or profit a customer brings across the relationship. This changes acquisition, retention, loyalty, contact frequency and segment prioritization.

### Acquisition

A company can afford a higher CAC for customers with higher expected lifetime value and lower churn risk.

### Retention

Budget should not be spread equally. High-value customers at risk may deserve more service, loyalty or reactivation effort.

### Personalization

Contacts, offers and channels can be selected by predicted value, responsiveness and relationship stage.

### Portfolio management

Segments can be compared by long-term contribution rather than short-term transaction revenue alone.

## Case logic

The source report references IBM's CLV-based resource allocation work: customer contacts were reallocated across channels such as direct mail, telesales, email and catalogues. The lesson is not that every company needs the same model, but that better allocation rules can increase value without raising total spend.

## Allocation implication

- High predicted value plus high responsiveness can justify more acquisition spend.
- Low value plus low responsiveness should not receive repeated expensive contact.
- Retention spend should be targeted by value, risk and timing.
- Personalization is most useful when it changes profit, not only message relevance.

| LIFECYCLE JOB | ALLOCATION QUESTION | VALUE LOGIC |
|---|---|---|
| **Acquire** | Target segments where expected value exceeds CAC | Budget is guided by future contribution, not only first purchase. |
| **Grow** | Use cross-sell, service and education to deepen value | Marketing works with product and customer success, not only media. |
| **Retain** | Identify churn risk before value disappears | Retention spend is prioritized by risk, value and intervention timing. |
| **Reactivate** | Test win-back offers against holdout groups | Do not reward campaigns for customers who would have returned anyway. |

**CAC**
MUST BE COMPARED WITH EXPECTED LIFETIME VALUE

**Risk**
DECIDES WHEN RETENTION DESERVES INTERVENTION

**Timing**
TURNS VALUE PREDICTION INTO INTERVENTION LOGIC

FINANCIAL ACCOUNTABILITY

# Marketing ROI must move from tracked revenue to incremental net profit.

Finance leaders care about profit, cash flow and return on capital. A serious marketing ROI framework must account for cost of goods sold, campaign cost, discounts, fulfilment burden, cannibalization and incrementality.

| ROI LENS | FORMULA LOGIC | RISK |
|---|---|---|
| **Vanity ROI** | Revenue attributed to campaign / media spend | Easy to report, but often overstates value. |
| **Contribution ROI** | Incremental gross profit / total campaign cost | Closer to finance logic because it includes margin. |
| **Incremental ROI** | Profit caused by campaign / total campaign cost | Requires experiments or strong causal modelling. |
| **Portfolio ROI** | Return across channels and time horizon | Better for budget decisions because channels interact. |

### Defensible interpretation

**Each additional dollar in this channel creates estimated incremental contribution margin up to this spending threshold.**

### Weak interpretation

The campaign increased engagement and platform-reported conversions. This may be descriptively true, but it is insufficient for causal or financial inference.

## Financial interpretation

ROI is analytically useful only when the numerator represents value that marketing plausibly caused. Platform-reported revenue can exaggerate effectiveness because it tends to reward channels near purchase, overlook cannibalization and include customers who would have purchased without intervention. Incremental profit is more difficult to estimate, but it is the construct that links marketing performance to financial accountability.

A rigorous ROI framework therefore incorporates contribution margin, total campaign cost, discount cost, operational pressure and the temporal horizon of expected return. This is particularly important when marketing activity changes price perception, repeat purchase probability or the composition of acquired customers. A low-cost campaign may still destroy value if it attracts low-quality demand or conditions customers to wait for incentives.

The objective is not to claim a single perfect ROI figure. The more defensible objective is to produce a decision rule: where marginal investment can be scaled, where further testing is required, where long-term brand investment should be protected and where expenditure should stop because expected marginal return falls below the firm's economic threshold.

This interpretation aligns marketing with investment logic. Expenditure is justified not by activity volume, but by the expected stream of incremental contribution it produces under uncertainty. The discipline of ROI is therefore less about post-campaign celebration and more about setting economically coherent rules before capital is allocated.

The scholarly caution is that ROI should not be reduced to a retrospective efficiency ratio. In marketing resource allocation, ROI functions best as a prospective investment criterion that links causal evidence, economic constraints and the firm's tolerance for uncertainty.

INTEGRATED FRAMEWORK

# The contribution is not a single model, but a decision architecture for marketing resource allocation.

**01**

### Define the objective

Choose the economic target: profit, CLV, retention, contribution margin or enterprise value.

**02**

### Connect the data

Bring together CRM, media spend, sales, pricing, service, seasonality and external market variables.

**03**

### Estimate marginal impact

Use econometrics, MMM and response curves to understand where the next dollar works.

**04**

### Validate causality

Run A/B tests, geo-lift tests and holdouts to separate attribution from incrementality.

**05**

### Optimize allocation

Shift budget across channels, segments and periods under real business constraints.

**06**

### Synthesize for managerial judgment

Translate model estimates into allocation hypotheses, financial implications and reviewable assumptions.

## Decision meeting rhythm

- Review response curves and experiment results.
- Identify underfunded and saturated channels.
- Compare acquisition and retention opportunities.
- Approve budget shifts with assumptions visible.

## Evidence synthesis

- Marginal ROI by channel and segment.
- Confidence range and validation status.
- Allocation implication and expected financial effect.
- Expected profit impact and constraint trade-offs.

LIMITS AND RISK

# The goal is scientific marketing, not mechanical marketing.

Creativity, brand meaning and human psychology still matter. Quantitative analytics makes them more accountable by testing assumptions, exposing trade-offs and improving allocation discipline.

> ***Data should discipline creative judgment, not replace it.***

### Data bias

Historical data may reflect old budgets, weak tracking, stockouts or competitor shocks. Bad data can make a precise model wrong.

### Attribution inflation

Last-click or platform attribution can overfund channels near purchase while undervaluing upper-funnel and brand effects.

### Short-termism

Immediate ROI can punish brand building, market entry or category education if the model horizon is too narrow.

### False certainty

Estimates are not facts. A research-based allocation model should disclose uncertainty, assumptions and validation status.

## Governance checklist

- Separate observation, attribution, causal estimate and managerial decision.
- Show model uncertainty and validation status.
- Keep long-term brand effects visible even when short-term ROI is weak.
- Document why managers override or expand model recommendations.

| HORIZON | TYPICAL ROLE | GOVERNANCE IMPLICATION |
|---|---|---|
| **Brand building** | Broad memory, fame, trust, future demand | Works over longer horizons and protects pricing power. |
| **Sales activation** | Search, CRM, offer, retargeting, sales push | Creates short-term conversion from current demand. |
| **Portfolio balance** | Allocate by horizon, category maturity and cash needs | Prevents short-term ROI from starving future growth. |
| **Evidence loop** | Track both immediate lift and delayed business effects | Makes brand investment more accountable without reducing it to clicks. |

## Control without killing judgment

A mature governance system does not force every decision into a single ROI number. It separates immediate sales response, delayed brand effects, customer value, pricing power and strategic option value.

This prevents two common errors: funding only the channels that harvest existing demand, and defending brand investment without any measurable learning agenda.

IMPLEMENTATION PATH

# Build evidence discipline before buying more media.

| | | |
|---|---|---|
| 01 **First 30 days** | Audit data, define objective, map spend and outcome chain. | A shared language between marketing and finance. |
| 02 **Days 31-60** | Construct the baseline measurement model, clean key data, design first incrementality test. | A measurement plan that can challenge attribution. |
| 03 **Days 61-90** | Estimate first response curves and segment-level value patterns. | Early reallocation hypotheses and saturation signals. |
| 04 **Quarter 2** | Run budget experiments and formalize the allocation review protocol. | A repeatable allocation review cycle. |
| 05 **Quarter 3+** | Integrate CLV, MMM, experiments and governance. | Marketing operating as a measurable growth portfolio. |

*Better marketing performance does not always require a bigger budget. Sometimes it requires a better allocation rule.*

## First workshop agenda

- Map current spend and measurement gaps.
- Choose one economic objective.
- Design the first holdout or geo-lift test.
- Define the first allocation evidence review.

CLOSING ARGUMENT

# Marketing becomes a growth engine when it can prove where money should go and where it should stop.

Quantitative analytics does not remove intuition. It gives intuition a disciplined feedback loop: estimate, test, learn, reallocate and document the decision.

**The strongest marketing organization is not the one with the most indicators. It is the one with the clearest evidentiary logic for allocation.**

## Five operating principles

- Start with a strategic choice, not a reporting artifact.
- Use experiments to challenge attribution, not to decorate it.
- Treat CLV as a portfolio lens, not a vanity prediction.
- Balance broad brand effects with short-term activation pressure.
- Make every measurement artifact clarify the decision it is meant to inform.

## Source notes

- The starting report discusses quantitative analytics, marketing resource allocation, marginal impact, experimentation, decision calculus, CLV and true ROI.
- The Wanamaker advertising-waste quotation is treated as historically plausible but not definitively attributed.
- The ebook distinguishes attribution from incrementality: attribution assigns credit, while incrementality estimates additional impact.
- CLV is framed as total customer worth or profit across the relationship, not only a single transaction.
- The IBM CLV case referenced in the source report is used as an example of reallocating resources without increasing total marketing investment.
- Decision calculus follows the idea that models should be simple, robust, adaptive, controllable and understandable for managers.
- MIT Marketing Management lecture notes were used for the 4P/5C frame, funnel diagnostics, marketing analytics, promotion and pricing logic.
- Marketing effectiveness references were used to separate short-term activation from longer-term brand building and broad-reach effects.

This ebook is a research synthesis created from the supplied report. It is written as a strategic guide for business and marketing leaders; any live deployment should validate data quality, privacy rules, experiment design and financial assumptions before reallocating budget.

PRESSUP RESEARCH EBOOK · QUANTITATIVE ANALYTICS AND MARKETING RESOURCE ALLOCATION