Return on AI (RoAI) — Methodology Review

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Document control

Field	Value
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Source policy	Original public material only; no Dodone adaptation
Full source links	See section 14

Executive summary

The authors define RoAI as a benefit-to-cost multiple, comparing counterfactual incremental benefit across periods with total deployment and organisational costs. Each period's benefit is adjusted for the share of value retained by the firm and for the reliability of evidence supporting future benefits. The analysis emphasises how delegation of marketing judgment can erode organisational capabilities.

Scope: Assess incremental marketing AI benefit adjusted for retained share, evidence durability and full economic cost over time.

Important: This paper documents published source material only. A missing equation or input is reported as not available in the reviewed sources; no substitute model or artificial worked example has been created.

1. Purpose and scope

Assess incremental marketing AI benefit adjusted for retained share, evidence durability and full economic cost over time. This paper is an independent explanatory analysis of published methodology; it is not endorsed by the originating publisher.

2. Counterfactual and baseline

Authors require a credible counterfactual for the gross incremental benefits. Time horizon T covers the periods over which consequences become economically material; the paper distinguishes short- and long-term benefits and costs.

3. Published model inputs and variables

- Delta B_t: incremental gross economic benefit versus counterfactual in period t.
- lambda_t: share of generated value retained by the company.
- d_t: evidence-durability weight representing the relevance of current evidence to period t.
- C_t: full economic cost, including infrastructure and use, transformation, governance, oversight and capability development/maintenance.
- T: chosen analysis horizon.

4. Cost methodology

Includes technology cost plus workflow transformation, monitoring, governance, oversight and human capability maintenance. The paper warns not to count the same payment both as a direct cost and a reduction in the retained-value share.

5. Benefit and value methodology

Short-term operating and marketing value and long-term benefits are evaluated against a counterfactual. Retained benefit is reduced by value-appropriation and evidence-durability factors. Organisational expertise development and erosion matter for future returns.

6. Published formulas and calculation logic

- Published paper equation: RoAI(T) = [sum over t=1..T of (d_t × lambda_t × Delta B_t)] / [sum over t=1..T of C_t].
- The authors define 1.00 as the break-even benefit-to-cost multiple; results above 1.00 indicate more retained evidence-adjusted benefit than cost.
- Discounting may be applied subsequently through conventional discounted cash flow; evidence durability and financial discounting address distinct problems.

7. Publisher-reported worked examples or results

Publisher example: a conventional first-quarter pilot calculation yields 1.50 when dividing estimated gross benefit by narrow approval-stage costs. The full RoAI framework produces 0.71 for Q1, approximately 0.78 at Q2, and 0.56 at Q8 in the illustrative retention-agent case. These are the authors' scenario outputs.

8. Sensitivity, attribution and uncertainty

Explicitly uses evidence-durability weighting to reflect changing relevance of current evidence, retained value to represent appropriation, and trajectories of capabilities and oversight costs. The numerical trajectory is a demonstration, not a typical expected path.

9. Author-scope qualifications and methodological limitations

- Conceptual/theoretical framework focused on marketing investment, not an externally validated prediction engine.
- The durability and retained-share parameters must be estimated with evidence or judgment for a specific deployment.
- The framework requires careful treatment of overlapping benefit and cost categories.

10. Independent reproducibility assessment

Strong for the published expression and explanatory example; a company application still requires independently established benefit, value-share, durability and cost inputs.

11. Public-information gap register

Information unavailable or incomplete	Source review status
Universal empirical defaults for durability and retained share: not supplied.	Not publicly available / insufficiently specified in reviewed source
Causal estimates for all AI marketing use cases: not supplied.	Not publicly available / insufficiently specified in reviewed source
General purpose production calculation implementation: not supplied.	Not publicly available / insufficiently specified in reviewed source

12. Independent reviewer observations

These observations address verifiability and scope; they are not additions to the publisher's financial method.

Confirm each numerical claim against the original publication before relying on it for an investment decision. Do not treat conceptual frameworks or opportunity estimates as if they were a reproducible company-level ROI algorithm.

Do not fill source gaps using assumed discount rates, value multipliers, proprietary weights, industry benchmarks, model code or synthetic test fixtures. An independent audit of calculations is possible only where sufficient primary data and methodology are disclosed.

13. Audit and publication checklist

- Primary publisher and publication dates have been identified.

- Source-specific equations are separated from descriptive process narratives.
- All author-reported numerical examples are identified as publisher examples.
- Unavailable parameters and proprietary elements are explicitly marked.
- No Dodone adaptations or fabricated examples have been introduced.
- Claims of complete numerical reproducibility are limited to publicly verifiable material.

14. Original source links and attribution

The following are the original publisher resources reviewed. Each link is clickable in the PDF and editable Word file.

S1 — Return on AI (RoAI): A framework for assessing AI investments in the marketing organization — https://link.springer.com/article/10.1007/s11747-026-01217-6

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