

✦ TEMPLATE · TEMPLATES

AI ROI Model

A formula-driven worksheet for estimating the return on an AI initiative: benefit drivers, full cost lines, payback and the assumptions behind every number.

FORMAT	LEVEL	READ TIME	UPDATED
Template	Beginner	Fill-in	Oct 2026

OVERVIEW

What this template covers

AI business cases are usually optimistic on benefits and incomplete on costs. This worksheet structures the estimate around four benefit drivers and four cost lines, each with a formula and named variables, so finance, operations and engineering can argue about assumptions rather than arithmetic. It is shown filled in with one clearly illustrative worked example; every value in your own model must come from your own baseline.

KEY TAKEAWAYS

- Every benefit needs a baseline measured today, not an estimate from a vendor deck.
- Count adoption explicitly: benefits scale with how many people actually use the system.
- Running costs (models, hosting, review, maintenance) recur; include them for every year.
- Change management and evaluation are real costs, not overhead to ignore.
- Model a conservative case as well as an expected one, and decide on the conservative one.

WHO IT'S FOR

- Finance and business partners
- Sponsors preparing an investment case
- Operations leaders
- Product and engineering leads

HOW TO USE IT

Fill sections 01–03 for an expected and a conservative case; section 04 gives payback and ROI. Every box shows a worked example — invoice processing for a fictional distributor, illustrative ₹ lakh (L) figures. Replace them with your own baselines.

CONTENTS

01 Scope, horizon and baselines
02 Benefit drivers
03 Cost lines
04 Net benefit and payback
05 Assumptions log and sensitivity
06 Review and sign-off

01 / SETUP

Scope, horizon and baselines

Fix the boundaries of the model before any numbers go in.

Initiative and process affected

01

e.g. “AI-assisted invoice processing for the accounts payable team.”

WORKED EXAMPLE

AI-assisted invoice processing for the accounts payable team of a fictional electrical-parts distributor: the system reads supplier invoices, matches them to purchase orders and goods receipts, and routes only exceptions to a clerk.

Time horizon and currency

02

Usually 3 years, in one currency. Note whether figures are monthly or annual.

WORKED EXAMPLE

3 years from go-live (Jan 2027), annual figures in ₹ lakh (1 L = ₹1,00,000). All numbers in this example are illustrative.

Baselines and where they come from

03

Current volume, handling time, error rate, cost per unit — with source system and date range.

WORKED EXAMPLE

- V = 60,000 supplier invoices a year — ERP, Apr 2025–Mar 2026
- T_0 = 0.20 h (12 min) per invoice — time study of 300 invoices, Aug 2026
- E_0 = 3% of invoices need rework — AP exceptions log, same period
- C_h = ₹600 loaded cost per AP hour; C_e = ₹1,500 per error (rework plus late-payment penalties, sample of 80 errors)

Adoption assumption (A)

04

Share of eligible work expected to go through the AI system, by year. Ramp it; adoption is never full on day one.

WORKED EXAMPLE

Expected: 50% in Year 1, 75% in Year 2, 90% in Year 3. Conservative: 35% / 55% / 65%. Handwritten and non-PO invoices stay manual in both cases.

✦ 02 / BENEFITS

Benefit drivers

Use only the drivers that apply. Each formula yields an annual value; multiply by adoption (A).

Benefit formulas

DRIVER	FORMULA	VARIABLES
B1 Time saved	$V \times (T_0 - T_1) \times C_h \times A$	V = annual volume; T_0 / T_1 = hours per unit before / after; C_h = loaded cost per hour
B2 Error reduction	$V \times (E_0 - E_1) \times C_e \times A$	E_0 / E_1 = error rate before / after; C_e = cost per error (rework, penalties, refunds)
B3 Revenue lift	$R \times L \times M \times A$	R = affected revenue; L = relative uplift; M = contribution margin
B4 Cost avoided	Σ avoided costs × A	e.g. hires not needed, outsourcing reduced, licences retired

B1 Time saved — values and result

01

V = ___, T_0 = ___, T_1 = ___, C_h = ___, A = ___ → B1 = ___. State whether saved time is redeployed or truly removed.

WORKED EXAMPLE

- V = 60,000, T_0 = 0.20 h, T_1 = 0.05 h, C_h = ₹600
- At full adoption: 60,000 × 0.15 × 600 = ₹54.0 L
- × A → Year 1 ₹27.0 L · Year 2 ₹40.5 L · Year 3 ₹48.6 L
- Saved hours are redeployed to supplier reconciliation, not removed — finance has agreed to count them

B2 Error reduction — values and result

02

V = ___, E_0 = ___, E_1 = ___, C_e = ___, A = ___ → B2 = ___

WORKED EXAMPLE

- V = 60,000, E_0 = 3%, E_1 = 1%, C_e = ₹1,500
- At full adoption: 60,000 × 0.02 × 1,500 = ₹18.0 L
- × A → Year 1 ₹9.0 L · Year 2 ₹13.5 L · Year 3 ₹16.2 L

B3 Revenue lift — values and result

03

R = ___, L = ___, M = ___, A = ___ → B3 = ___. How will uplift be measured — control group, A/B test?

WORKED EXAMPLE

Not claimed — B3 = ₹0. Faster processing could capture early-payment discounts, but there is no baseline yet; the pilot will measure it before it enters the model.

B4 Cost avoided — values and result

04

List each avoided cost and why it would otherwise be incurred.

WORKED EXAMPLE

- Legacy OCR licence retired at renewal: ₹3.0 L a year from Year 2
- Not scaled by A — the whole licence goes once the new system is live
- Seasonal temp staff not counted here: those hours are already in B1

✦ WATCH FOR

Double counting

Time saved (B1) and cost avoided (B4) often describe the same hours. Count each saving once, under the driver that matches how the business will actually realize it.

03 / COSTS

Cost lines

Separate one-off from recurring costs. Recurring costs repeat every year of the horizon.

Cost formulas

COST LINE	TYPE	FORMULA / COMPONENTS
K1 Build	One-off	Discovery + design + engineering + integration + evaluation set + security review
K2 Run	Recurring	(V × A × c_req) + hosting + vector / search infrastructure + monitoring; c_req = model cost per request
K3 People	Recurring	Human review time + support + model / prompt maintenance + evaluation upkeep
K4 Change	One-off + recurring	Training + process redesign + communications + productivity dip during rollout

K1 Build — components and total

01

WORKED EXAMPLE

- Discovery and process mapping ₹3.0 L
- Engineering and ERP integration ₹18.0 L
- Evaluation set (1,000 labelled invoices) ₹2.0 L · security review ₹2.0 L
- **K1 = ₹25.0 L, one-off in Year 1**

K2 Run — per year

02

Volume × adoption × cost per request, plus fixed infrastructure. Include headroom for growth and retries.

WORKED EXAMPLE

- Model cost: V × A × c_req with c_req = ₹5 per invoice (incl. retries) → ₹1.5 L / ₹2.25 L / ₹2.7 L
- Hosting, document store and monitoring: ₹3.0 L fixed a year
- **K2 = ₹4.5 L · ₹5.25 L · ₹5.7 L** for Years 1–3

K3 People — per year

03

Who reviews outputs, maintains prompts and evaluations, and handles escalations, and how much of their time.

WORKED EXAMPLE

- AP clerk reviewing exceptions: 0.5 FTE × ₹8 L = ₹4.0 L
- Engineer maintaining prompts, evaluations and ERP mappings: 0.25 FTE × ₹16 L = ₹4.0 L
- **K3 = ₹8.0 L a year**

K4 Change — one-off and per year

04

WORKED EXAMPLE

- One-off: training and process redesign ₹4.0 L + productivity dip in the first two months ₹2.0 L = **₹6.0 L**
- Recurring: refresher training and new-joiner onboarding **₹1.0 L a year**

✦ 04 / RESULT

Net benefit and payback

Calculate both cases. Decide on the conservative one; plan capacity for the expected one.

Summary formulas

MEASURE	FORMULA
Annual benefit (B)	B1 + B2 + B3 + B4
Annual recurring cost (K_r)	K2 + K3 + recurring part of K4
One-off cost (K_o)	K1 + one-off part of K4
Net annual benefit (N)	B − K_r
Payback period	K_o ÷ (N ÷ 12) months, if N > 0
ROI over horizon	(Σ N over years − K_o) ÷ K_o

Results by year

LINE	YEAR 1	YEAR 2	YEAR 3	TOTAL
Benefit (B)	₹36.0 L	₹57.0 L	₹67.8 L	₹160.8 L
Recurring cost (K_r)	₹13.5 L	₹14.25 L	₹14.7 L	₹42.45 L
One-off cost (K_o)	₹31.0 L	—	—	₹31.0 L
Net (B − K_r − K_o)	−₹8.5 L	₹42.75 L	₹53.1 L	₹87.35 L
Cumulative net	−₹8.5 L	₹34.25 L	₹87.35 L	₹87.35 L

Expected case — payback and ROI

01

WORKED EXAMPLE

- K_o = ₹31.0 L; Year-1 N = 36.0 − 13.5 = ₹22.5 L → payback ≈ 31.0 ÷ (22.5 ÷ 12) = **16.5 months** (the cumulative line turns positive about month 15)
- ROI = (22.5 + 42.75 + 53.1 − 31.0) ÷ 31.0 = **282% over 3 years**

Conservative case — payback and ROI

02

e.g. lower adoption, smaller time saving, higher run cost. State which assumptions changed.

WORKED EXAMPLE

- Changed: adoption 35% / 55% / 65%, T_1 = 0.08 h, E_1 = 1.5%, c_req = ₹8
- N = ₹6.2 L / ₹19.5 L / ₹24.7 L → payback ≈ **27 months**
- ROI = (50.4 − 31.0) ÷ 31.0 = **63% over 3 years**

✦ 05 / ASSUMPTIONS

Assumptions log and sensitivity

The model is only as good as its weakest assumption. Find it and test it in the pilot.

ASSUMPTION	VALUE USED	SOURCE / EVIDENCE	CONFIDENCE (L/M/H)	HOW THE PILOT WILL TEST IT
Time per invoice after (T_1)	0.05 h (3 min)	Vendor demo on 50 of our invoices	L	Time study of 200 pilot invoices

ASSUMPTION	VALUE USED	SOURCE / EVIDENCE	CONFIDENCE (L/M/H)	HOW THE PILOT WILL TEST IT
Adoption (A), Year 1	50%	Share of PO-backed, typed invoices in ERP	M	Weekly share processed without manual keying
Error rate after (E_1)	1%	Offline test on 1,000 labelled invoices	M	Rework log for pilot supplier groups
Model cost per invoice (c_req)	₹5	Token counts from the offline test × list price	M	Actual monthly provider bill ÷ invoices
Cost per error (C_e)	₹1,500	Sample of 80 errors, Apr–Sep 2026	H	Not tested — baseline already measured

Most sensitive assumption

01

Which single variable, if wrong, changes the decision? What value would make payback unacceptable?

WORKED EXAMPLE

Adoption (A). Every benefit scales with it. If Year-2 adoption stays below 40%, conservative payback moves past the 36-month horizon and the case fails — so the pilot's first gate is adoption, not accuracy.

✦ 06 / SIGN-OFF

Review and sign-off

Tick each item before the case goes to the investment decision.

- ☐ Every benefit uses a measured baseline with a named source
- ☐ Adoption ramps over time rather than starting at full
- ☐ Run, people and change costs are included for every year
- ☐ No saving is counted under two drivers
- ☐ A conservative case exists and the decision is based on it
- ☐ Finance has reviewed the formulas and inputs

Decision

01

Invest / invest in pilot only / do not invest — and the metrics the pilot must hit.

WORKED EXAMPLE

Invest in a 3-month pilot on two supplier groups (≈ 8,000 invoices). Go to full build only if the pilot shows $T_1 \leq 5$ min, $E_1 \leq 1.5\%$ and ≥ 40% of eligible invoices processed without manual keying.

Prepared by — name, date

02

WORKED EXAMPLE

V. Shah, AP Operations Manager · 9 Oct 2026

Finance reviewer — name, signature, date

03

WORKED EXAMPLE

K. Rao, Finance Business Partner · signed, formulas and inputs checked · 13 Oct 2026

Sponsor — name, signature, date

04

WORKED EXAMPLE

M. Iyer, CFO · approved for pilot only · 15 Oct 2026

✦ GET IN TOUCH

Want us to run this with your team?

We help sponsors and finance teams build AI business cases on measured baselines, then design pilots that test the assumptions that matter most.

- ✦ Baseline measurement
- ✦ AI business case workshops
- ✦ Pilots designed to validate ROI

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