

EVM DEFINITIONS & QUICK SUMMARY

Points 1-29

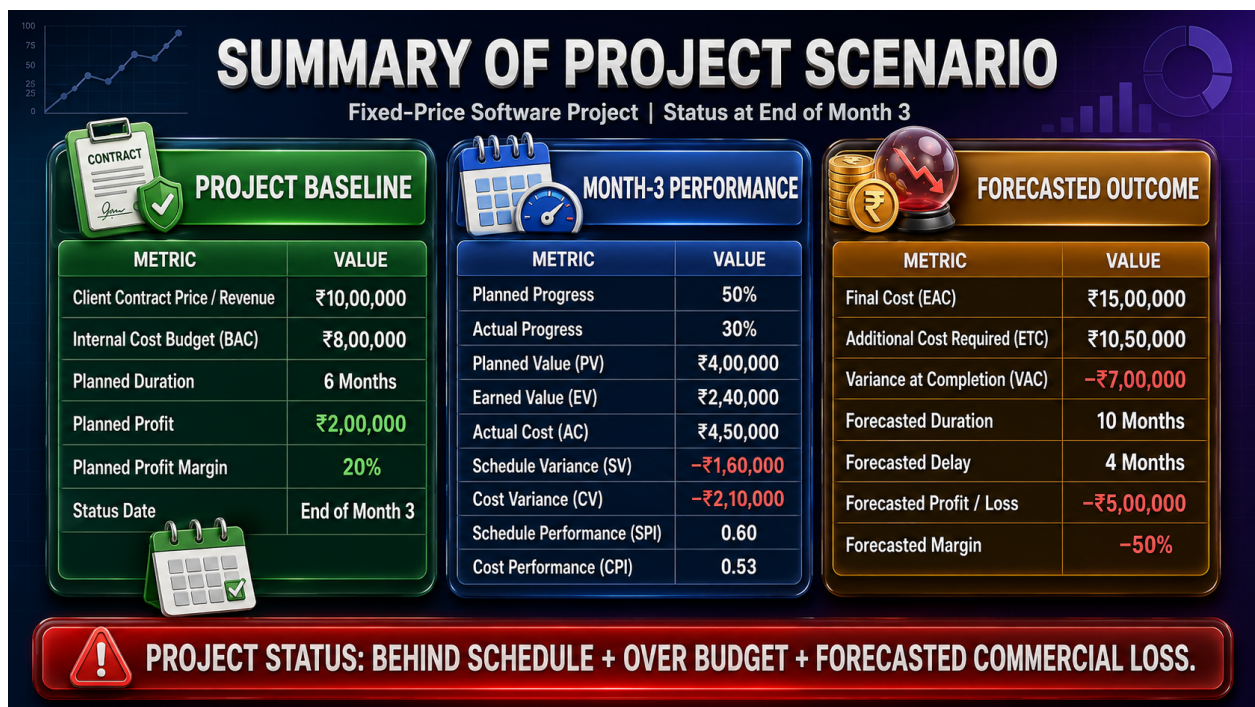
Fixed-Price Project Profitability and Earned Value Management

CLIENT REVENUE	INTERNAL BAC	STATUS DATE
₹10,00,000	₹8,00,000	End of Month 3
PLANNED	ACTUAL	FORECAST
50%	30%	10 Months / ₹15L EAC

Project status: Behind schedule + over budget + forecasted commercial loss.

Executive Scenario Summary

Metric	Value	Meaning
Client contract revenue	₹10,00,000	Amount agreed with the client
Internal cost budget (BAC)	₹8,00,000	Approved delivery-cost baseline
Planned duration	6 months	Original schedule
Planned profit / margin	₹2,00,000 / 20%	Commercial expectation
Status date	End of Month 3	Performance measurement date
Planned / actual progress	50% / 30%	20 percentage points behind
Actual Cost	₹4,50,000	56.25% of internal BAC



Executive summary visual: baseline, Month-3 performance and forecasted outcome.

Definitions and Quick Summary: Points 1-29

1. Project Scenario

Definition: The starting commercial and delivery context against which the project will be controlled.

A company signs a six-month fixed-price software project for ₹10 lakh and approves ₹8 lakh as its internal delivery-cost budget.

Quick summary: The project begins with ₹2 lakh expected profit and a 20% margin.

2. Contract Revenue vs Internal Cost Budget

Definition: Contract revenue is what the client agrees to pay; internal cost budget is what the company plans to spend.

Revenue ₹10,00,000 - Internal BAC ₹8,00,000 = Planned Profit ₹2,00,000

Quick summary: Revenue and BAC serve different purposes and must not be mixed in EVM calculations.

3. Budget at Completion (BAC)

Definition: The total approved internal cost baseline for completing 100% of the project.

BAC = ₹8,00,000

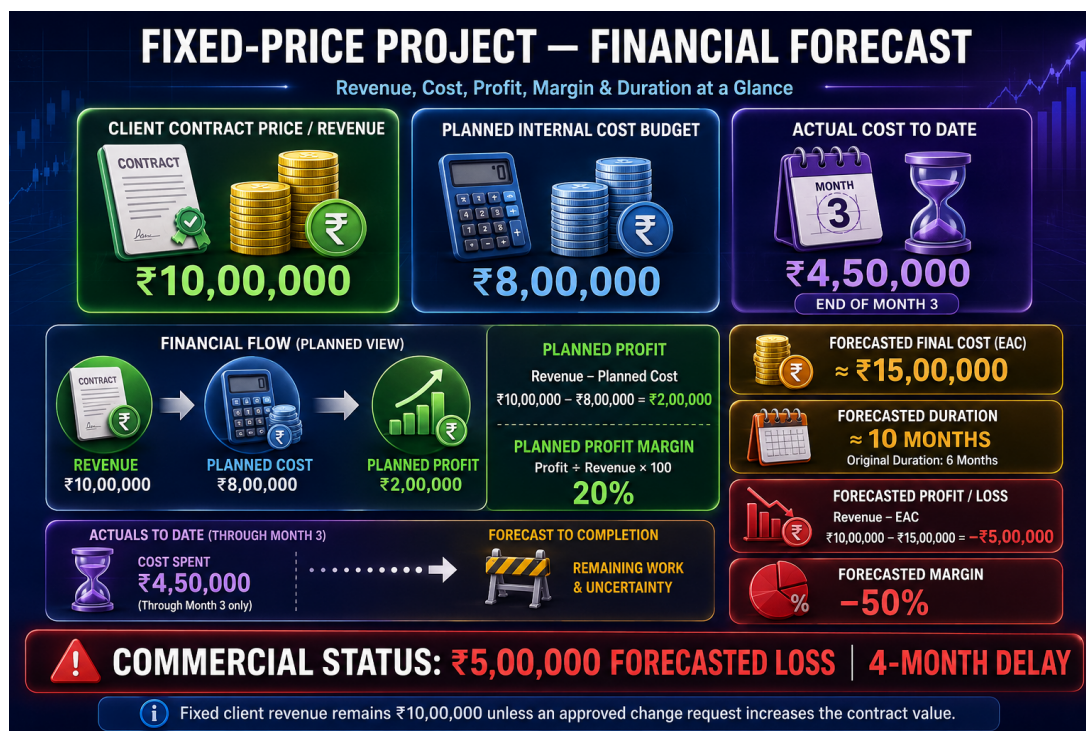
Quick summary: BAC is not revenue, invoicing, Actual Cost or remaining budget.

4. Monthly Planned Checkpoints

Definition: Periodic control points used to compare cumulative planned progress, completed work and cost.

Quick summary: At Month 3 the planned checkpoint is 50%, equal to PV of ₹4 lakh.

Month	Planned %	Cumulative PV
1	16.67%	₹1,33,333
2	33.33%	₹2,66,667
3	50.00%	₹4,00,000
4	66.67%	₹5,33,333
5	83.33%	₹6,66,667
6	100.00%	₹8,00,000



Commercial view: client revenue, internal budget, planned profitability and forecasted loss.

5. Month-3 Performance Position

Definition: The formal comparison of baseline expectations and actual results at the reporting date.

Planned progress is 50%, actual progress is 30%, and Actual Cost is ₹4.5 lakh.

Quick summary: The team completed 30% while consuming 56.25% of the internal BAC.

6. Planned Value (PV)

Definition: The budgeted value of work that should have been completed by the status date.

PV = BAC × Planned Progress = ₹8,00,000 × 50% = ₹4,00,000

Quick summary: By Month 3, work worth ₹4 lakh should have been completed.

7. Earned Value (EV)

Definition: The budgeted value of the work actually completed by the status date.

EV = BAC × Actual Progress = ₹8,00,000 × 30% = ₹2,40,000

Quick summary: EV is completed-work value, not client revenue or invoiced value.

8. Actual Cost (AC)

Definition: The real project expenditure incurred up to the status date.

AC = ₹4,50,000; AC ÷ BAC × 100 = 56.25%

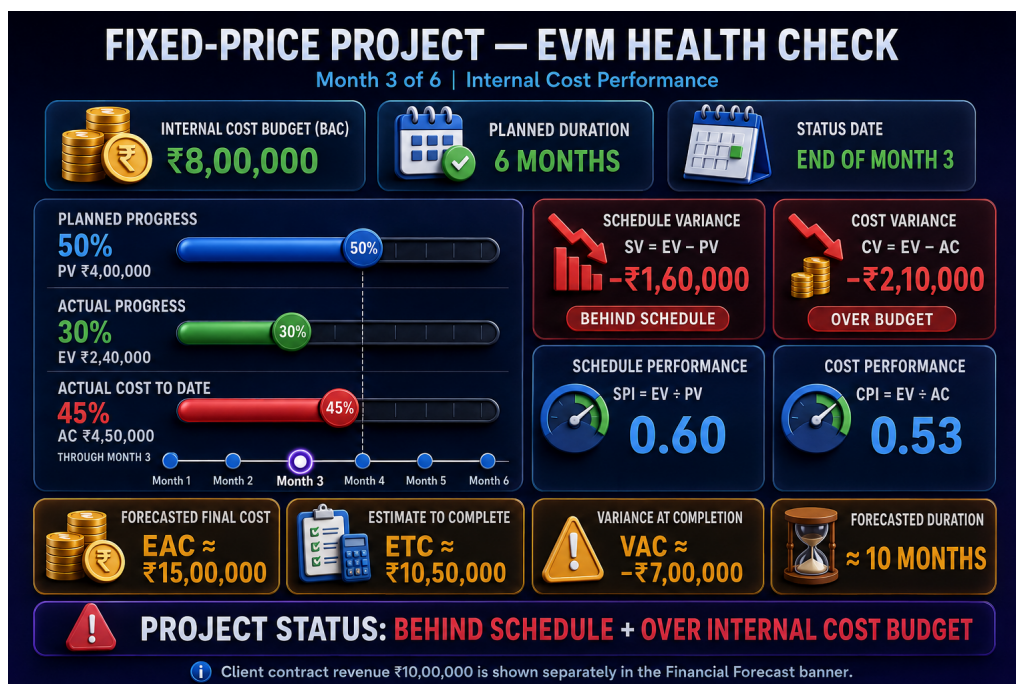
Quick summary: The project spent 56.25% of BAC but completed only 30% of work.

9. EVM Summary at Month 3

Definition: The combined BAC, PV, EV and AC snapshot used to calculate performance.

Quick summary: PV asks what should be done; EV asks what is done; AC asks what was spent.

Metric	Value	Plain meaning
BAC	₹8,00,000	Total approved internal budget
PV	₹4,00,000	Scheduled work value
EV	₹2,40,000	Completed work value
AC	₹4,50,000	Actual expenditure



EVM health-check visual using the ₹8 lakh internal BAC scenario.

Visual note: This earlier artwork displays AC as 45%. Against the ₹8 lakh BAC, ₹4.5 lakh is 56.25%; the calculations in this PDF are authoritative.

10. Schedule Variance (SV)

Definition: The difference between completed-work value and scheduled-work value.

$$SV = EV - PV = ₹2,40,000 - ₹4,00,000 = -₹1,60,000$$

Quick summary: Negative SV means the project is behind schedule in budget-value terms.

11. Schedule Performance Index (SPI)

Definition: A ratio measuring schedule efficiency.

$$SPI = EV \div PV = ₹2,40,000 \div ₹4,00,000 = 0.60$$

Quick summary: For every ₹1 of scheduled work, only ₹0.60 of work value has been completed.

12. Cost Variance (CV)

Definition: The difference between completed-work value and actual expenditure.

$$CV = EV - AC = ₹2,40,000 - ₹4,50,000 = -₹2,10,000$$

Quick summary: Negative CV means the project is over budget for the work completed.

13. Cost Performance Index (CPI)

Definition: A ratio measuring cost efficiency.

$$CPI = EV \div AC = ₹2,40,000 \div ₹4,50,000 = 0.5333 \approx 0.53$$

Quick summary: Every ₹1 spent is producing only about ₹0.53 of budgeted work value.

14. Complete Month-3 Health Check

Definition: A combined view of physical progress, schedule performance and cost performance.

Quick summary: SPI and CPI below 1 confirm the project is both behind schedule and cost-inefficient.

Measurement	Result	Status
Planned vs actual	50% vs 30%	Behind
SV / SPI	-₹1.60L / 0.60	Unfavourable
CV / CPI	-₹2.10L / 0.53	Unfavourable
Budget consumed	56.25%	High for 30% completion

15. Estimate at Completion (EAC)

Definition: The forecasted total project cost at completion.

$$EAC = BAC \div \text{exact CPI} = ₹8,00,000 \div 0.5333 \approx ₹15,00,000$$

Quick summary: If present cost efficiency continues, final cost may reach ₹15 lakh.

16. Estimate to Complete (ETC)

Definition: The additional cost expected from the status date until completion.

$$ETC = EAC - AC = ₹15,00,000 - ₹4,50,000 = ₹10,50,000$$

Quick summary: Another ₹10.5 lakh may be required after the ₹4.5 lakh already spent.

17. Variance at Completion (VAC)

Definition: The forecasted difference between internal BAC and final cost.

$$VAC = BAC - EAC = ₹8,00,000 - ₹15,00,000 = -₹7,00,000$$

Quick summary: The internal cost baseline is forecasted to be exceeded by ₹7 lakh.

18. Forecasted Project Duration

Definition: An indicative completion timeline based on current schedule efficiency.

Forecast Duration = Original Duration ÷ SPI = 6 ÷ 0.60 = 10 months; Delay = 4 months

Quick summary: Validate this indicative forecast with critical-path, dependency and resource analysis.



Master dashboard connecting the baseline, Month-3 status, performance and forecasts.

Visual note: The lower duplicate CPI gauge in this earlier visual shows 0.55. The correct CPI for this scenario is 0.53, as stated throughout this PDF.

19. Planned Profitability

Definition: The financial return expected before delivery begins.

$$\text{Planned Profit} = \text{Revenue} - \text{BAC} = ₹10,00,000 - ₹8,00,000 = ₹2,00,000$$

Quick summary: The project initially expected ₹2 lakh profit.

20. Planned Profit Margin

Definition: Planned profit expressed as a percentage of client revenue.

$$\text{Planned Margin} = \text{Planned Profit} \div \text{Revenue} \times 100 = 20\%$$

Quick summary: The company expected to retain 20% of revenue as profit.

21. Forecasted Profit or Loss

Definition: Expected commercial result using fixed revenue and forecasted final cost.

$$\text{Forecast Profit/Loss} = \text{Revenue} - \text{EAC} = ₹10,00,000 - ₹15,00,000 = -₹5,00,000$$

Quick summary: A ₹2 lakh planned profit has changed into a ₹5 lakh forecasted loss.

22. Forecasted Profit Margin

Definition: Forecasted profit or loss expressed as a percentage of revenue.

$$\text{Forecasted Margin} = -₹5,00,000 \div ₹10,00,000 \times 100 = -50\%$$

Quick summary: Margin deteriorates from 20% to -50%, a decline of 70 percentage points.

23. Planned vs Forecasted Commercial Position

Definition: A comparison showing how delivery performance affects business outcome.

Quick summary: Revenue stays fixed while forecast cost rises, destroying the original margin.

Measure	Planned	Forecasted	Change
Revenue	₹10L	₹10L	No change
Cost	₹8L	₹15L	+₹7L
Profit / loss	+₹2L	-₹5L	-₹7L
Margin	20%	-50%	-70 points
Duration	6 months	10 months	+4 months

24. Why a Profitable Project Becomes Loss-Making

Definition: Profitability deteriorates when delivery costs exceed the assumptions used during pricing.

- Scope creep or unapproved work
- Underestimated effort and technical complexity
- Low productivity, defects, rework or overtime
- Vendor, dependency or client-approval delays
- Weak change control and commercial governance

Quick summary: Fixed revenue plus rising delivery cost reduces profit and can create a loss.

25. Monthly Management Checkpoints

Definition: Recurring governance reviews covering delivery, cost, quality, risk and commercial performance.

- Compare planned and actual progress
- Update PV, EV, AC, SV, CV, SPI and CPI
- Refresh EAC, ETC, VAC and completion date
- Review defects, rework, risks and dependencies
- Review invoices, revenue, profit, margin and change requests

Quick summary: Early measurement creates time for corrective action.

26. Recommended Recovery Plan

Definition: A controlled set of actions for correcting schedule, cost and commercial problems.

- Validate the reported 30% completion
- Perform root-cause analysis
- Create a bottom-up estimate for remaining work
- Freeze unapproved scope and raise change requests
- Prioritise critical-path work and optimise resources
- Reduce rework through stronger quality controls
- Reforecast cost, duration, profit and margin

Quick summary: Every corrective action should have an owner, due date and measurable outcome.

27. Client Report vs Internal Report

Definition: Separate reports that match the information needs and confidentiality of each audience.

- Client report: progress, milestones, risks, dependencies, decisions, changes and forecast date
- Internal report: Actual Cost, CPI, EAC, VAC, profitability, margin deterioration and commercial exposure

Quick summary: Sensitive profitability information normally remains internal unless disclosure is contractually required.

28. Common Calculation Mistakes

Definition: Errors caused by mixing revenue, BAC, progress, cost and profitability measurements.

- Using ₹10 lakh revenue as BAC when internal BAC is ₹8 lakh
- Calling ₹4.5 lakh 45% of an ₹8 lakh BAC; it is 56.25%
- Using revenue instead of BAC to calculate PV and EV
- Confusing SV with CV or VAC with commercial loss
- Using rounded CPI instead of exact CPI for forecasting
- Treating money spent as physical progress

Quick summary: Maintain separate commercial and EVM baselines, then reconcile them in the profitability forecast.

29. Final Project Summary and Management Conclusion

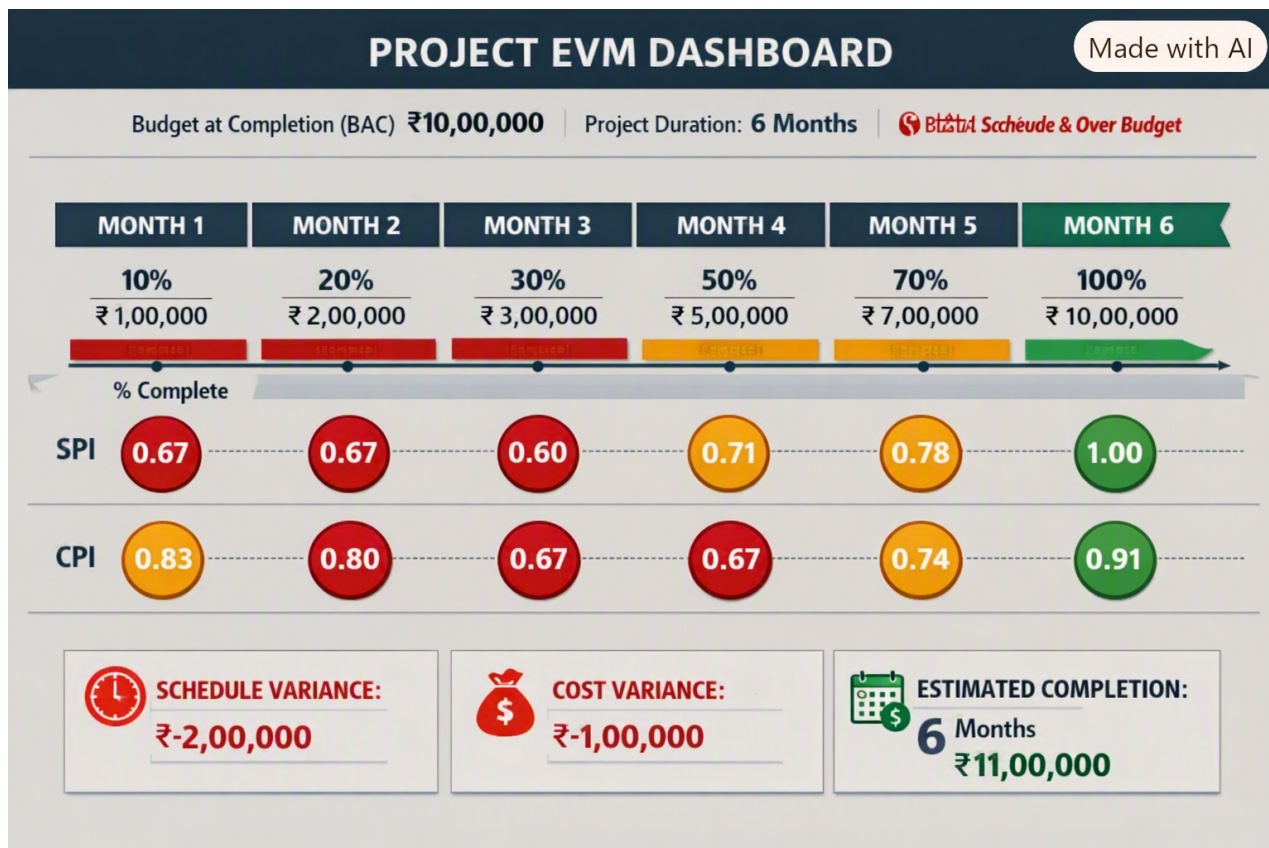
Definition: The consolidated decision view combining performance, forecast and profitability.

Quick summary: The project is behind schedule, over budget and forecasted to generate a commercial loss.

Metric	Result
Revenue / BAC	₹10,00,000 / ₹8,00,000
PV / EV / AC	₹4,00,000 / ₹2,40,000 / ₹4,50,000
SV / CV	-₹1,60,000 / -₹2,10,000
SPI / CPI	0.60 / 0.53
EAC / ETC / VAC	₹15,00,000 / ₹10,50,000 / -₹7,00,000
Duration / delay	10 months / 4 months
Planned profit / margin	₹2,00,000 / 20%
Forecast loss / margin	-₹5,00,000 / -50%

PROJECT STATUS: BEHIND SCHEDULE + OVER BUDGET + FORECASTED COMMERCIAL LOSS.

Appendix: Additional Supplied Visual Reference



Additional supplied EVM dashboard visual.

Visual note: This visual illustrates a different/older scenario (including BAC ₹10 lakh and different monthly values). It is included as requested, but it must not be used to calculate the ₹10 lakh revenue / ₹8 lakh BAC case documented in this PDF.

Authoritative scenario used in this guide

Revenue	BAC	PV	EV	AC	SPI	CPI
₹10L	₹8L	₹4L	₹2.4L	₹4.5L	0.60	0.53

Management lesson

Revenue tells us what the client will pay. BAC tells us what delivery should cost. EVM shows how efficiently the project is performing. Profitability shows whether the engagement still makes commercial sense.

End of guide