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THE MEASUREMENT DESK 45

20 Essential Project KPIs and How to Calculate Them



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Define the measure before calculating

A KPI becomes useful when it supports a decision with comparable evidence.

Make a metric card

For every measure, state its purpose, formula, unit, reporting period, data owner, scope and exclusions. Agree the target and response trigger rather than assuming a universal threshold.

Use the examples carefully

All numbers in this guide are fictional. The earned-value examples share one snapshot: BAC 100,000; PV 50,000; EV 45,000; AC 54,000; remaining-work forecast 56,000.

Protect comparability

Use the same cutoff and definitions in numerator and denominator. If the denominator is zero, report not applicable with an explanation. Show underlying counts as well as percentages.

TAKE IT TO YOUR PROJECT

Write the decision that one proposed KPI should help you make.

01 / Milestone on-time rate

Measure due milestones against their committed dates.

Formula and boundary

On-time milestones / milestones due in the reporting period x 100. Include due milestones that remain incomplete in the denominator; record any authorised baseline changes separately.

Worked example

Five milestones were due in October. Four met their committed dates and one remains incomplete. On-time rate = 4 / 5 x 100 = 80%. The count is four of five.

Interpret and act

Review the missed milestone's delivery effect and next decision. A milestone count does not weight business importance, so one critical miss can matter more than several minor successes.

TAKE IT TO YOUR PROJECT

Define what counts as a milestone and which date is the comparison basis.

02 / Overdue open-task rate

Show how much unfinished work has passed its due date.

Formula and boundary

Overdue open tasks / all open tasks at the cutoff x 100. A task is overdue here when its due date is earlier than the cutoff date and it is not complete.

Worked example

At Friday's cutoff, 20 tasks are open and five are overdue. Rate = 5 / 20 x 100 = 25%. Tasks without due dates are separately flagged for data review.

Interpret and act

Inspect age, dependencies and impact of the overdue tasks. The rate may rise after many healthy tasks close, so read the counts and trend alongside the percentage.

TAKE IT TO YOUR PROJECT

Agree how your team handles missing dates and end-of-day cutoffs.

03 / Accepted-deliverable rate

Count accepted outputs while keeping their different sizes visible.

Formula and boundary

Accepted deliverables / deliverables in the defined scope x 100. Use documented acceptance and a stable scope version. This is an unweighted count of outputs.

Worked example

Six of ten scoped deliverables have acceptance records. Rate = 6 / 10 x 100 = 60%. Four still need work or acceptance; the measure says nothing about their relative effort.

Interpret and act

Check whether the remaining outputs contain the major integration or operating work. Do not label this count as earned value or percentage of total project effort.

TAKE IT TO YOUR PROJECT

List the acceptance evidence required before an output enters the numerator.

04 / Schedule performance index

Compare earned and planned value at the same status date.

Formula and boundary

SPI = EV / PV. EV is budgeted value of performed work; PV is budgeted value of work planned by the cutoff. Both use the same approved measurement basis.

Worked example

The shared snapshot gives SPI = 45,000 / 50,000 = 0.90. Less budgeted work has been earned than planned at this date.

Interpret and act

Investigate unfinished controlling work and the current schedule forecast. SPI is a value ratio, not days of delay; it can reach one at completion even after a late finish.

TAKE IT TO YOUR PROJECT

Read SPI alongside the critical path and forecast completion date.

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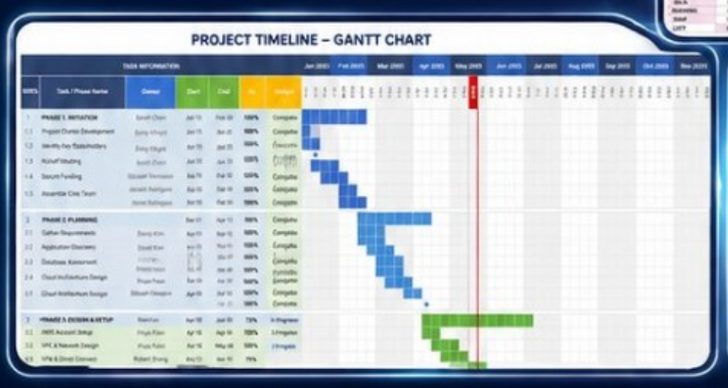
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05 / Cost performance index

Compare the value earned with the cost incurred.

Formula and boundary

CPI = EV / AC. Use consistent scope, cutoff and cost treatment. Reconcile accounting timing before interpreting an apparent change in performance.

Worked example

CPI = 45,000 / 54,000 = 0.8333, approximately 0.83. Each unit of recorded actual cost has earned about 0.83 units of budgeted work value.

Interpret and act

Inspect the causes of the cost difference and remaining-work estimates. A cumulative ratio does not explain which rates, quantities or rework are driving the result.

TAKE IT TO YOUR PROJECT

Identify the cost categories most responsible for the current CPI.

06 / Cost variance

Express the earned-value cost difference in money.

Formula and boundary

CV = EV - AC. A negative result indicates actual cost exceeds the budgeted value of the work performed. This differs from comparing actual spend with a time-phased spending plan.

Worked example

CV = 45,000 - 54,000 = -9,000. The snapshot has an unfavourable earned-value cost variance of 9,000.

Interpret and act

Link the variance to work packages and explain causes. Spending below a calendar budget could still accompany a negative CV when less work has been accomplished.

TAKE IT TO YOUR PROJECT

State the sign convention and currency whenever you report CV.

07 / Variance at completion

Compare the approved completion budget with the current total forecast.

Formula and boundary

VAC = BAC - EAC. BAC is budget at completion; EAC is the current estimate at completion. State how EAC was prepared and keep the approved budget visible.

Worked example

A bottom-up ETC of 56,000 plus AC of 54,000 gives EAC 110,000. VAC = 100,000 - 110,000 = -10,000.

Interpret and act

The forecast exceeds BAC by 10,000. Review the remaining estimate, uncertainty and response options rather than assuming the historical variance alone predicts the final result.

TAKE IT TO YOUR PROJECT

Attach the EAC method and forecast date to a reported VAC.

08 / Forecast overrun percentage

Express a projected completion overrun relative to the approved budget.

Formula and boundary

Forecast overrun % = (EAC - BAC) / BAC x 100. Here a positive value means forecast overrun. This sign convention is the reverse of VAC.

Worked example

Using EAC 110,000 and BAC 100,000: (110,000 - 100,000) / 100,000 x 100 = 10%. The forecast is 10% above BAC.

Interpret and act

Present the absolute amount with the percentage and identify the decision required. An authorised budget change needs its own record; do not silently replace BAC to hide the trend.

TAKE IT TO YOUR PROJECT

Show the overrun amount, percentage and approved comparison budget together.

09 / Requirements acceptance coverage

Track which agreed requirements have acceptance evidence.

Formula and boundary

Requirements with passing acceptance evidence / requirements in the defined baseline x 100. State whether all requirements are counted equally and how shared tests map to them.

Worked example

Eighteen of 24 baseline requirements have valid passing evidence. Coverage = 18 / 24 x 100 = 75%. Six still lack confirmed acceptance evidence.

Interpret and act

Inspect the significance of the uncovered requirements. Passing many minor requirements does not compensate for an unverified critical security or operating condition.

TAKE IT TO YOUR PROJECT

Link each counted requirement to its current acceptance record.

10 / First-pass acceptance yield

Measure outputs accepted without returning for correction.

Formula and boundary

Outputs accepted on first submission / outputs first submitted in the period x 100. Follow the same submission cohort and record its acceptance outcomes.

Worked example

Twenty outputs were first submitted in October. Sixteen passed first review and four required correction. Yield = 16 / 20 x 100 = 80%.

Interpret and act

Investigate repeated defects, unclear criteria or late user input. Keep later resubmission success separate; counting it as a new first submission would inflate the result.

TAKE IT TO YOUR PROJECT

Define first submission and treatment of withdrawn or pending reviews.

11 / Defect cohort closure rate

Follow a defined group of defects to a stated cutoff.

Formula and boundary

Defects closed from the selected cohort / defects in that cohort x 100. Name the cohort and closure criteria; do not mix old closures with a different group of new defects.

Worked example

Fifteen valid defects were logged during the release test. By the review cutoff, twelve are verified closed. Cohort closure rate = 12 / 15 x 100 = 80%.

Interpret and act

Inspect the remaining three by severity and age. Closing many low-impact defects does not establish release readiness when a critical failure remains open.

TAKE IT TO YOUR PROJECT

Report the cohort dates and unresolved severity profile with the rate.

12 / Rework effort percentage

Show the recorded effort used to correct completed or attempted work.

Formula and boundary

Rework hours / total recorded work hours in the period x 100. Agree a rework definition and make it practical for people to record without double-counting.

Worked example

The team records 200 total hours, including 24 hours correcting earlier work. Rework effort = 24 / 200 x 100 = 12%. The 24 hours are already inside the total.

Interpret and act

Examine causes such as unstable inputs, unclear acceptance or avoidable errors. Do not classify normal learning or all design iteration as rework without an agreed definition.

TAKE IT TO YOUR PROJECT

Review one recurring rework cause and choose a preventive action.

13 / Mean change-request turnaround

Measure elapsed decision time for a defined set of requests.

Formula and boundary

Sum of recorded turnaround durations / requests decided in the selected cohort. Here duration is working days from receipt to decision, using one agreed calendar and timestamp convention.

Worked example

Five decided requests took 2, 3, 4, 6 and 5 working days. Mean = 20 / 5 = 4 working days. Separately report requests still awaiting a decision.

Interpret and act

Inspect the longest waits and where requests queue. A low mean for completed cases can hide a growing backlog of unresolved requests.

TAKE IT TO YOUR PROJECT

State the clock's start, stop and pause rules before comparing turnaround.

14 / Action on-time closure rate

Test whether due commitments were completed by their agreed dates.

Formula and boundary

Actions closed on time / actions due in the period x 100. Keep due but still-open actions in the denominator and preserve authorised due-date changes.

Worked example

Ten actions were due this week. Seven closed by their due dates, two closed late and one remains open. Rate = 7 / 10 x 100 = 70%.

Interpret and act

Review the late and open actions for delivery effects and repeated ownership gaps. Closing an action requires the agreed evidence, not merely a status edit.

TAKE IT TO YOUR PROJECT

Choose the evidence that proves one important action is complete.



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15 / Risk-response action completion

Track delivery of the responses already agreed for risks.

Formula and boundary

Due response actions completed / response actions due by the cutoff x 100. Use a defined review period or cumulative cutoff consistently and include unfinished due actions.

Worked example

Twelve response actions are due by the review. Eight are complete. Completion rate = 8 / 12 x 100 = 66.7%, rounded to one decimal place.

Interpret and act

This measures action completion, not the amount of risk removed. Reassess residual exposure and effectiveness; a completed response may not have worked as expected.

TAKE IT TO YOUR PROJECT

Pair one response completion record with evidence of its actual effect.

16 / Capacity allocation ratio

Compare assigned effort with the capacity actually available.

Formula and boundary

Allocated hours / available hours for the same people and period x 100. Remove agreed leave and non-project duties from available project capacity; avoid counting a person's hours twice.

Worked example

A specialist group has 120 available project hours next week and 135 allocated hours. Ratio = 135 / 120 x 100 = 112.5%. The excess is 15 hours.

Interpret and act

Resolve overload through sequencing, scope or confirmed support. This ratio represents planned allocation, not productive utilisation, earned value or proof that overtime is feasible.

TAKE IT TO YOUR PROJECT

Check the next constrained specialist's allocation across all projects.

17 / Throughput

Count completed work items over a defined period.

Formula and boundary

Throughput is the number of items finished in the reporting interval. State the workflow's finish condition and interval; keep item categories visible where their sizes differ greatly.

Worked example

Nine items meet the agreed finish condition during one five-day reporting week. Throughput is nine items for that week, not nine percent and not nine days.

Interpret and act

Use a series of comparable periods to explore variation. A single week's count does not establish a reliable future delivery rate or a measure of individual productivity.

TAKE IT TO YOUR PROJECT

Record the finish rule and show several recent throughput periods.

18 / Mean cycle time

Measure elapsed time from the workflow's start point to its finish point.

Formula and boundary

Sum of completed-item cycle times / completed items in the selected cohort. State whether the clock uses calendar or working days and keep start and finish definitions stable.

Worked example

Five completed items took 2, 3, 3, 4 and 8 calendar days. Mean cycle time = 20 / 5 = 4 calendar days. The slowest item took eight.

Interpret and act

Inspect variation and waiting time as well as the mean. Completed items do not reveal how long unfinished items have already waited; review their age separately.

TAKE IT TO YOUR PROJECT

Identify one queue that contributes to a long completed-item cycle time.

19 / Work-item age

Measure elapsed time for work that has started but has not finished.

Formula and boundary

Age = cutoff timestamp - workflow start timestamp for an unfinished item. Use the same start definition and calendar basis as the workflow's cycle-time measure.

Worked example

An unfinished item started at noon on 27 October. At noon on 31 October, its age is four calendar days. It has no completed cycle time yet.

Interpret and act

Compare age with relevant historical cycle-time information and investigate blocking or waiting. Age is elapsed time, not remaining effort or a guaranteed completion estimate.

TAKE IT TO YOUR PROJECT

Review the oldest unfinished item and agree the next action to move it.

20 / Positive stakeholder response rate

Use a clear survey definition and disclose who responded.

Formula and boundary

Positive responses / valid responses x 100. Define positive before reviewing results, such as scores four or five on a five-point question. Report the survey question and dates.

Worked example

Forty people were invited; 24 gave valid responses and 18 were positive. Positive rate = 18 / 24 x 100 = 75%. Response rate = 24 / 40 x 100 = 60%.

Interpret and act

Respondents may differ from nonrespondents, so do not assume 75% of all stakeholders are satisfied. Read comments and investigate concerns across affected groups.

TAKE IT TO YOUR PROJECT

Publish response counts and the response rate alongside satisfaction.

Choose a small decision-focused set

Twenty available measures do not require twenty dashboard tiles.

Select for the project

Choose measures that cover the result, delivery outlook, cost, quality and the project's main uncertainty. Assign an owner who can explain and act on each signal.

Read the combination

The shared snapshot has SPI 0.90, CPI about 0.83 and forecast overrun 10%. These signal investigation; the causes and options still require work-package and schedule evidence.

Maintain the definitions

Review data quality, denominators, scope changes and incentives. If a metric encourages people to split tasks or hide defects, change the management response and measure design.

TAKE IT TO YOUR PROJECT

Select five useful measures and document their owners, cutoffs and decision triggers.